



MANUFACTURERS' RECORD

A Weekly Southern Industrial and Hardware Newspaper.

Vol. 9. No. 26.
WEEKLY.

BALTIMORE, AUGUST 7, 1886.

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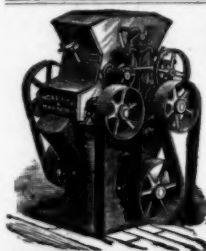
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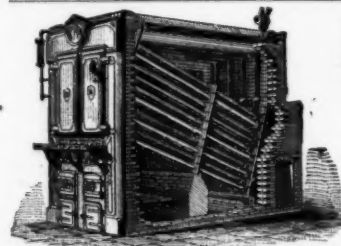
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With Maps, Illustrations, and Full Description of the
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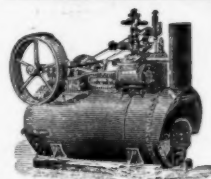
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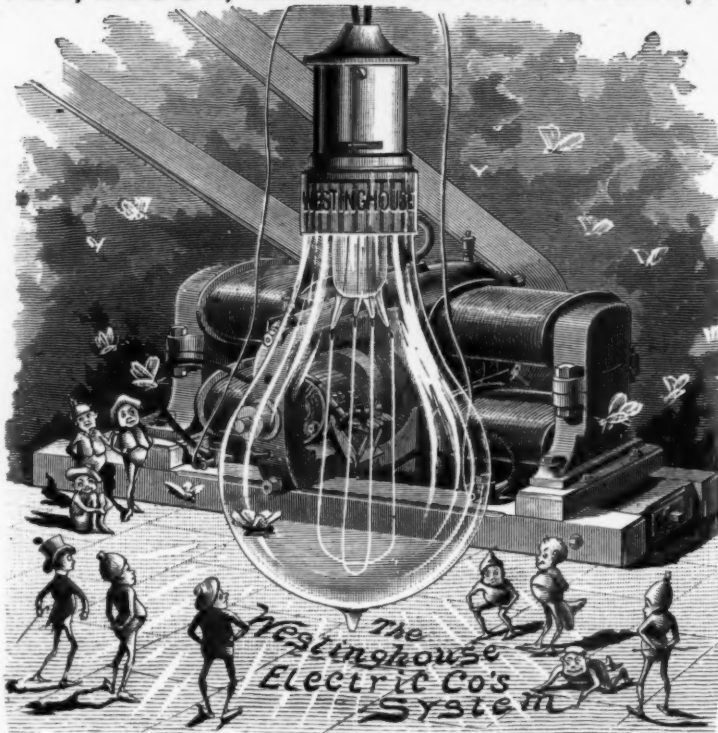
DECEMBER 1, 1885 to JULY 1, 1886.

CENTRAL STATIONS.

Plainfield E. L. Co., Plainfield, N. J.	2000 16 c. p.
	90 arc.
Allegheny Co. E. L. Co., Pittsburgh, Pa.	2000 16 c. p.
" " Allegheny, Pa.	1800 "
Trenton E. L. & P. Co., Trenton, N. J.	1000 "
Keystone E. L. & P. Co., Phila., Pa.	1500 "
Citizens E. L. & P. Co., New Castle, Pa.	1000 "
Westinghouse Ill. Co., Schenectady, N. Y.	1000 "
Oskaloosa, E. L. Co., Oskaloosa, Ia.	1000 "
East End E. L. Co., Pittsburgh, Pa.	600 "
Beaver Dam E. L. Co., Beaver Dam, Wis.	500 "
Butler E. L. Co., Butler, Pa.	300 "

ISOLATED PLANTS.

Union Depot, Pittsburgh, Pa.	1000 16 c. p.
Monongahela House, Pittsburgh, Pa.	800 "
Windsor Hotel, New York	600 "
Pennsylvania Lead Co., Pittsburgh, Pa.	600 "
T. C. Jenkins, Pittsburgh, Pa.	400 "



ISOLATED PLANTS—Continued.

The Pittsburgh Club, Pittsburgh, Pa.	350 16 c. p.
The Westinghouse Air Brake Co. Pittsburgh, Pa.	300 "
The Smith Building, New York	300 "
Globe Yarn Mills, Fall River, Mass.	300 "
Morrison, Beare & Cass, Tyrone, Pa.	250 "
The Philadelphia Co., Pittsburgh, Pa.	250 "
Jas. Doak, Jr. & Co., Phila., Pa.	200 "
Lombard, Ayres & Co., Bayonne, N. J.	200 "
Fort William Henry Hotel, Lake George, N. Y.	200 "
Norristown Opera House, Norristown, Pa.	200 "
Wheeling Steel Works, Wheeling, W. Va.	125 "
Atlas Paper Pulp Co., Appleton, Wis.	100 "
Kimberly and Clark Co., Appleton, Wis.	75 "
Wilbur Eliason, Chestertown, Md.	50 "
Burlington "Free Press," Burlington, Vt.	50 "
Fairbanks, Morse & Co., Chicago, Ill.	50 "
E. T. Ames, Sparta, Wis.	25 "
Gibson & Giles, Washington, Pa.	25 "
Str. "Fishkill-on-Hudson," Newburgh, Pa.	25 "
D. Simons, Altoona, Pa.	25 "
G. A. Morrison, New York	25 "
Erie City Iron Works, Erie, Pa.	40 Lights of 150 "

LAMPS 10, 16, 25, 50 and 150 C. P. GUARANTEED FROM 600 TO 1200 HOURS' LIFE.

WESTINGHOUSE, CHURCH, KERR & CO., No. 17 Cortlandt Street, New York.

Wiswell Ore Pulverizer and Amalgamator Combined.

The cost of this Mill is much less than any other machine of sufficient capacity to do the same amount of work.

It requires less power to run it, (10-horse being sufficient.)

The wear and tear of the Mill is much less than any other Quartz Mill doing the same amount of work, and the quality of the work done by it is greatly superior to work done in any other Quartz Mill now in use.

It crushes to a uniform fineness and makes no slimes, so that no sizing is required for concentration.

The Mill is equally well adapted to crushing and pulverizing of all classes of ores, either for amalgamation or concentration, and will pulverize and amalgamate from one-half to one ton per hour, according to character of ore and fineness of screens.

With ordinary care there is no loss of mercury by flouting, and consequent loss of gold, as in most other Mills where mercury is used in the Mill.

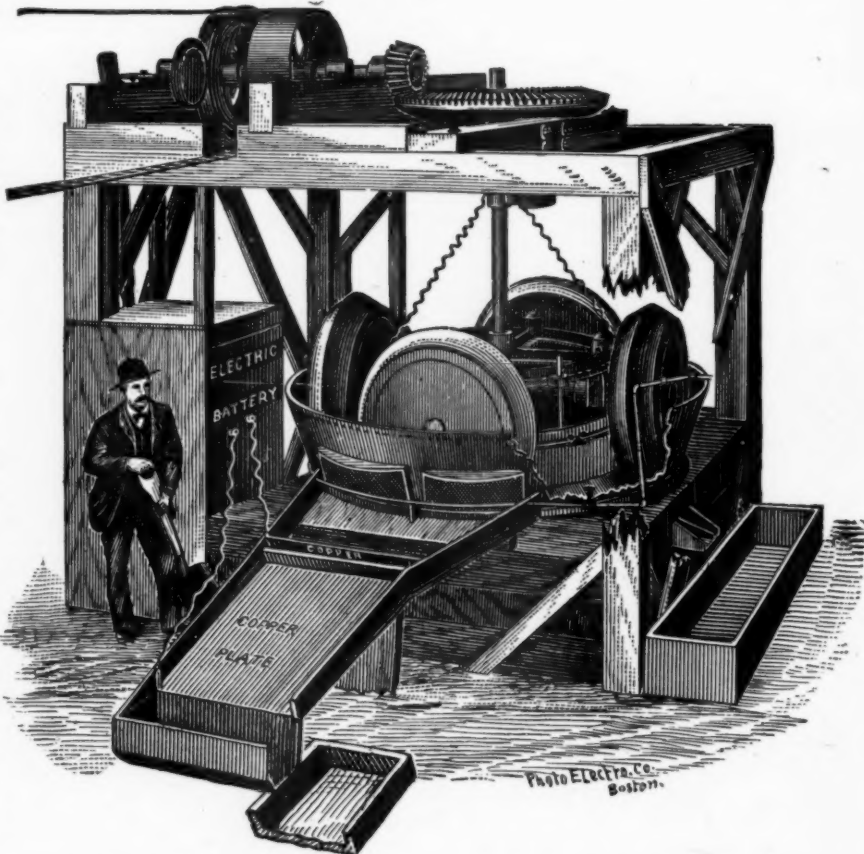
Amalgamation is carried on in the same operation with the crushing. The mercury is placed in the Mill in quantities varying from 10 to 40 pounds.

The application of electricity to the Mill for the purpose of cleaning and keeping the mercury alive has been to a very large extent superseded by the invention and introduction of the Mercury Trap in the Mill for the purpose of drawing off the mercury when charged with gold or on the slightest indication of flouting. By this ingenious device the mercury can be changed as often as desired without loss of time in either crushing or amalgamating. By opening this Trap the amalgam is discharged from the Mill in three minutes, and clean mercury introduced in its place.

To those familiar with running a Gold Mill this latter advantage will be greatly appreciated; in fact, it gives the mill-man full control of his work.

This Mill has been on exhibition at the foundry of Messrs. Bisbee & Endicott, at Chelsea, Mass., for the past 18 months, a good part of the time in active operation, and we have treated the most rebellious ores from many mining districts with most satisfactory results to the parties concerned.

The past year we have sold many Mills, which may be found in Michigan, North Carolina, Dakota, Montana, Idaho, Colorado, California, Mexico, Nova Scotia, etc. All those in operation are giving the most perfect satisfaction, as testimony will prove, and we will take pleasure in referring to any one of these on application.



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DRAWING FRAMES, ANY LENGTH, WITH 3, 4 AND 5 LINES OF STEEL ROLLERS.
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1½, 1 5-16, and 1¼-inch Gauge

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JAS. H. McMULLAN, Agent,

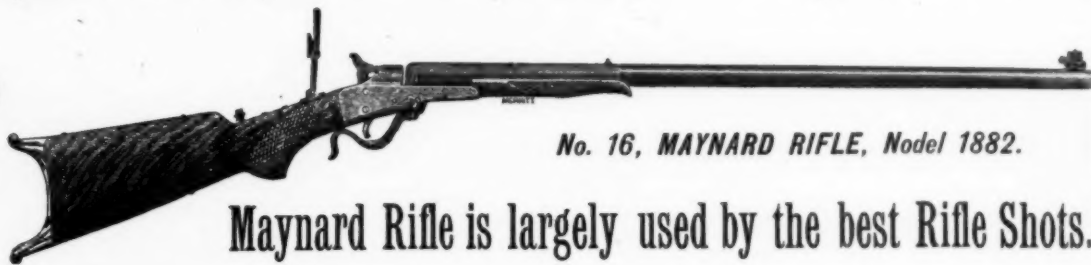
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THE ♦ MAYNARD ♦ RIFLE

In all Calibres from 22 to 50.

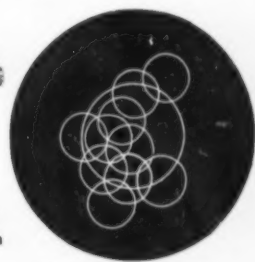
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Barrels of different
Calibres, and a
Shot Barrel.



No. 16, MAYNARD RIFLE, Model 1882.

Maynard Rifle is largely used by the best Rifle Shots.



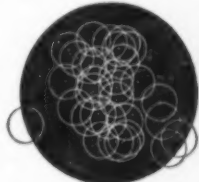
TEN CONSECUTIVE SHOTS,
100 yards, with a MAYNARD
RIFLE, 28 inch, 32 calibre, 35
grains of powder, with a
patched bullet of 165 grains.



SHOWING BARREL DETACHED.



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HUNTING SIGHT.



THIRTY CONSECUTIVE SHOTS,
75 ft. off-hand, with a MAY-
NARD RIFLE, 22 calibre. By
H. G. BIXBY, Nashua, N. H.

At the Spring Meeting of the Lawrence (Mass.) Rifle Club, May 30, 1885, Mr. E. F. RICHARDSON, with a Maynard Rifle, made 27 consecutive bull's eyes, at a distance of 200 yards, off-hand, on a paper target. On July 11, 1885, he scored 31 consecutive bull's eyes under the same conditions. These scores are the best on record.

On May 9, 1885, Mr. W. H. TAFT, of Brattleboro', Vt., made in a regular match, with a Maynard Rifle, at 200 yards distance, off-hand, 117 out of a possible 120, on the Massachusetts Paper Target, a score which has never been excelled.

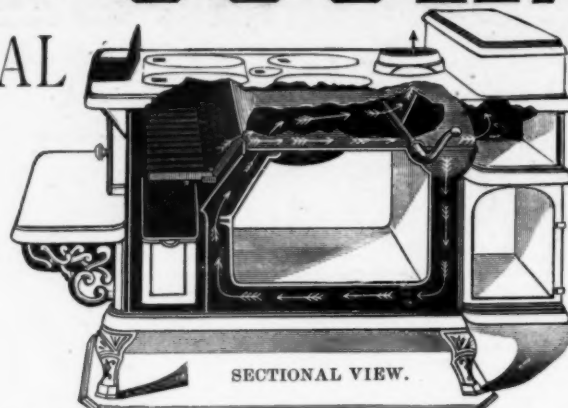
Inside of a ring 3¼ inch diameter, Mr. C. H. BROWN, of Fitchburg, Mass., in a regular match at Walnut Hill Range, July 5th, 1884, at a distance of 200 yards, with a Maynard Rifle, placed 7 consecutive shots.

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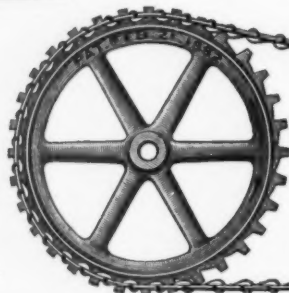
The above print will illustrate the peculiar flue in our Climax Cook Stoves. This plan insures the even distribution of the heat to all parts of the oven. No other stove or range has this flue. Manufactured by

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Mention this Paper.



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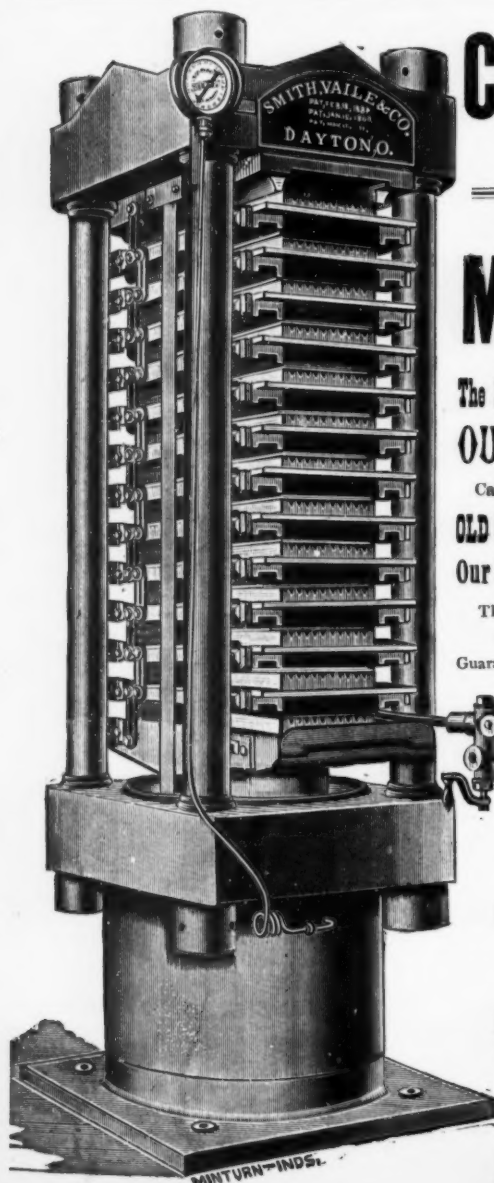


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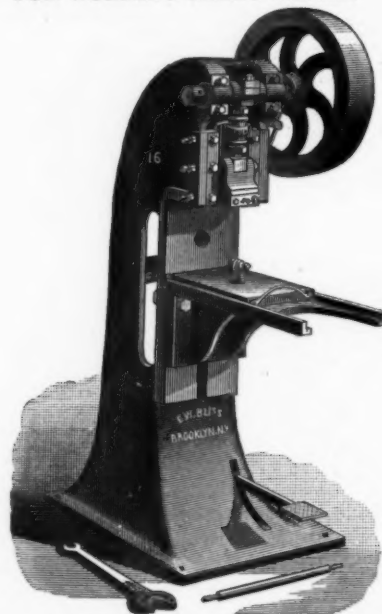
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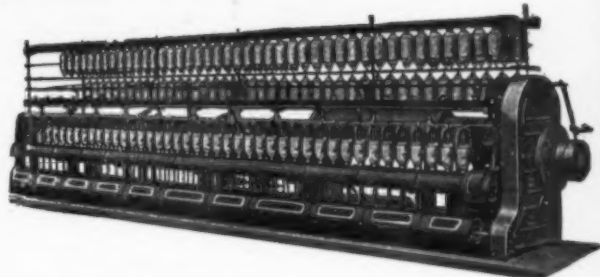
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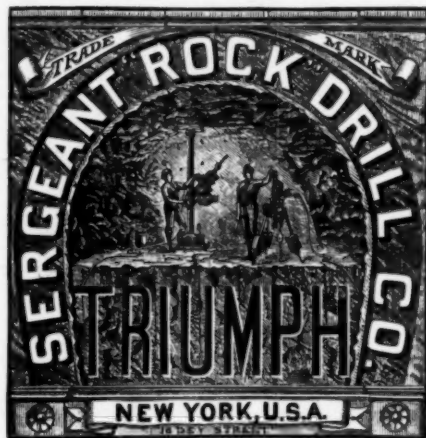
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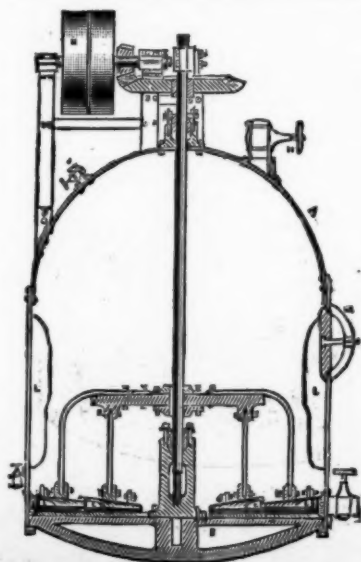
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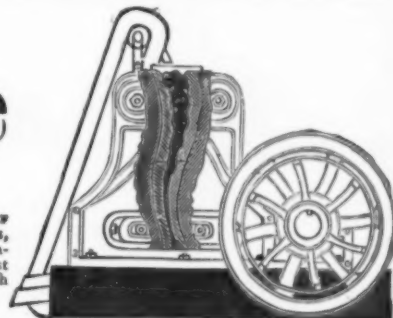
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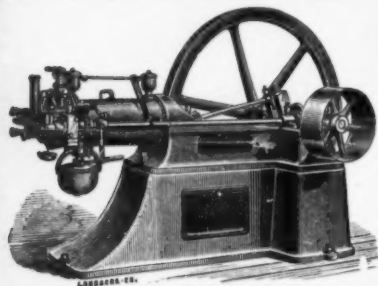
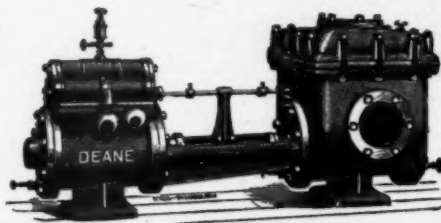
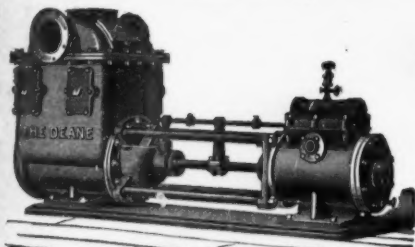
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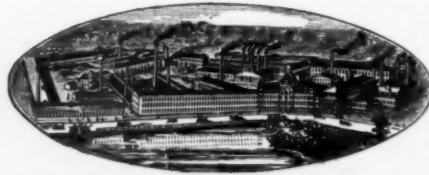
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BALTIMORE Manufacturers' Record.

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W. H. EDMONDS,
Secretary and General Manager.

R. H. EDMONDS, EDITOR.

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BALTIMORE, AUGUST 7, 1886.

THE publishers of the MANUFACTURERS' RECORD have purchased from the estate of the late George U. Porter the "Baltimore Journal of Commerce and Price-Current," and will continue its publication as a weekly commercial paper. The Journal of Commerce was conducted by Mr. Porter for 37 years, and is accepted everywhere as standard authority on matters pertaining to the trade and commerce of Baltimore. It will be the aim of the publishers to make it a vigorous and progressive general commercial and trade paper, and to give it the same position in that line that is occupied by the MANUFACTURERS' RECORD as an industrial journal. It will seek to promote the trade interests of Baltimore and the South, and will endeavor to furnish the most reliable, trustworthy and thorough information on all topics likely to be of interest to business men in general.

Its market reports will be edited with the utmost care, and will make the paper invaluable to merchants generally, commission houses, shippers of grain, cotton, lumber, &c.; while its statistics of the grain and cotton trades will be thoroughly reliable, and to all interested in these staples this feature alone will prove of great interest and value.

The subscription price of the Journal of Commerce is \$3.00 a year. Sample copies will be mailed free upon application.

If you wish to keep posted on the progress of the South, read the MANUFACTURERS' RECORD. Price \$3.00 a year.

Need of Banking Capital in the South.

The need of more banking capital in the South, to which attention has so often been called by the MANUFACTURERS' RECORD, is a matter of vital importance to the development and prosperity of the business interests of this section. In the letter from Bristol, Tenn., published in last week's issue, our correspondent says that he found at that place, as all through Southwest Virginia, "that the great want that is felt in fostering the industrial pursuits and developing the varied resources of this region is sufficient capital." There are probably to-day, at the lowest estimate, fully one hundred thriving towns in the South in which, like Bristol, business is seriously hampered and restricted solely on account of the lack of banking capital, and in which a properly managed bank would be certain to yield large profits. Of course the number of places in which more banking capital is needed for the transaction of business is much greater than this; but, as we have just said, there is probably fully that number of places in which the success of a bank would be positively assured if rightly managed, owing to the very large business that it would at once command. The rate of interest for money is entirely too large in the South, and even at the high rates charged it is often impossible for business men to secure the money needed on the best security, owing to the scarcity of banking capital. The prosperity of the South is largely dependent upon an increase in the number of banks there, for the Southern business man paying anywhere from 9 or 10 up to 15 and 20 per cent. interest for the use of money can not well compete with those in other sections who secure money at from 3 to 6 per cent. Not only must the Southern people of wealth give more attention to the establishment of banks, now one of the most vital needs of that section, but vigorous efforts must be made to induce Northern capitalists seeking profitable investment to investigate the advantages of the South for the profitable employment of money in banking enterprises. The Atlanta Constitution says that the lack of banking capital is very seriously felt in Georgia. It must be admitted on all sides, says the Constitution, "that the commerce of Georgia has materially increased since the war. Our railway mileage has more than doubled; our cities and towns have increased in population; our industrial enterprises have been enlarged and increased, and a wonderful development has been going on in our material resources.

But for twenty years the State and the people have been crippled—paralyzed, we may say—by a lack of capital. This lack is not imaginary. It has been felt in every department of business and by every class. Mr. Calvin, writing to the Augusta Chron-

icle, touches this question with some figures that are not only interesting but startling. At present the State of Georgia, with fifteen national and twenty-two State banks, has a banking capital of less than \$7,000,000. In 1860, Augusta, with a population of 13,000 souls, had a banking capital of \$9,000,000, more by \$2,000,000 than the whole State now has. To-day Augusta has a banking capital of about \$1,500,000. This comparison will hold good in every city in the State, and in every State of the South.

Moreover, the banking capital of Augusta and of the State, large as it was, comparatively, was profitably employed in 1860, whereas even the small banking capital of Georgia at this time cannot be employed for the benefit of those who most need it, owing to the fact that the national banking laws limit it to certain uses. In 1860 the banking capital of the State was loaned on real estate, bonds and notes at a reasonable rate of interest on long time.

The demands of the State are such that more than four times the amount of bank capital in use in Georgia in 1860 could be profitably employed now. This is a more serious matter than some of our public men seem to think. It is, indeed, a vital matter." The Constitution then takes the ground that "there is but one remedy that suggests itself, and that is the re-establishment of State banks under such restrictive legislation as will keep them out of the whirlpool of speculation. To this end it is necessary that the federal tax of ten per cent. on circulation shall be repealed." Whether this be the only way to secure the needed increase in banking capital in the South or not, it is quite certain this increase is so important that some way must be devised for obtaining it.

Diversifying the South's Industries.

The diversification of the industrial interests of the South, so noticeable for some months past, is one of the most gratifying evidences of the permanent prosperity of the manufactures of this section. Instead of making a vigorous effort to push Southern pig iron into Northern markets, to be manufactured there and returned to the South in the thousand and one forms of manufactures into which it enters, there is a growing disposition to establish diversified industries where the iron is made to consume the product of Southern furnaces. Among some of the largest enterprises of this kind lately reported, have been two large iron pipe works, to be started in Chattanooga, one of which, it is claimed, will be the largest establishment of the kind in the world, and the erection a Bessemer steel rail mill, now in progress at the same city, while notice now comes of the building, at Nashville, of a \$75,000 to \$100,000 rolling mill and malleable

iron works, and at Birmingham of an extensive stove foundry. Of somewhat smaller enterprises in the same line of industry, the last six months have seen some forty to fifty machine shops and foundries, several stove foundries, bridge and bolt works, &c., established in the South. Thus, while the South is yearly increasing its output of pig iron, and still more furnaces are under construction, the home consumption of pig iron likewise grows from month to month.

Production of Pig and Steel.

The first half of 1886 shows the largest production of pig iron ever made in the United States in the same time, and yet, notwithstanding this very heavy output, the consumption has so evenly kept pace with it that on July 1st the total stock of pig iron in the country was only 54,000 tons more than on January 1st, or considerably less than one-half the aggregate production for one week. Compared with one year ago, when the stock of iron was 692,916 tons, there is a decrease of 222,000 tons, the stock on July 1st of this year being 470,421 tons. This enormous production of iron which, as these statistics show, is passing into consumption almost as rapidly as it leaves the furnace, proves the great activity that is now making itself felt in the iron trade, and which is almost certain to spread from that to all other industries. The total output of iron in each State for the first six months of 1885 and 1886 compares as follows:

States.	Tons of 2,000 lbs. (Includes spiegeleisen.)	
	First half of 1885.	First half of 1886.
Maine.....	.....	2,420
Massachusetts.....	.....	3,686
Connecticut.....	7,017	10,845
New York.....	75,191	117,958
New Jersey.....	28,014	79,113
Pennsylvania.....	1,167,855	1,541,793
Maryland.....	8,383	11,193
Virginia.....	74,687	69,768
North Carolina.....	800	1,000
Georgia.....	7,644	28,689
Alabama.....	118,186	146,280
Texas.....	1,000	250
West Virginia.....	35,995	49,952
Kentucky.....	16,768	19,351
Tennessee.....	79,144	95,045
Ohio.....	273,060	439,904
Indiana.....	3,594	10,979
Illinois.....	141,476	195,630
Michigan.....	66,557	89,105
Wisconsin.....	17,867	24,773
Missouri.....	18,505	28,139
Minnesota.....	.....	.....
Colorado.....	5,481	.....
Oregon.....	1,805	.....
California.....	.....	1,750
Washington Territory.....	1,857	.....
Total.....	2,150,816	2,954,209

The increase as shown by these figures was 800,000 tons. The gains in the Southern States were in Maryland 3,000 tons, Georgia 15,000 tons, Alabama 28,000 tons, West Virginia 14,000 tons, Kentucky 3,000 tons, Tennessee 16,000 tons; while in Virginia there was a decrease of 5,000 tons, due to idleness of one or two large furnaces. The aggregate production of pig iron, as well as of Bessemer steel, Bessemer rails and Open Hearth steel, will be greater this year than ever before.

Production of Bessemer steel ingots in the first half of 1886 amounted to 1,073,663 net tons, against 938,418 tons in the second half of 1885, and 763,344 tons in the first half of 1885. These figures include our production

of Clapp-Griffiths ingots in the periods mentioned—24,810 net tons in the first half of 1886, 17,247 tons in the second half 1885, and 4,400 tons in the first half of 1885. The production of Open Hearth steel ingots in the first half of 1886 amounted to 92,540 net tons, against 80,543 tons in the second half of 1885, and 68,838 tons in the first half of 1885; while the production of Bessemer steel rails in the first half of the present year amounted to 707,447 net tons, against 622,161 tons in the second half of 1885, and 452,446 tons in the first half of 1885. Large as was the production of Bessemer steel rails in the first half of 1886 it was exceeded in one of the half years of 1882, if not in both. In that year there were made 1,438,155 net tons of Bessemer steel rails, the one-half of which quantity is greater than the large production of 707,447 tons in the first half of 1886.

Railroad Building.

One of the most noticeable features of the times is the remarkable activity in the organization of railroad enterprises, and as we have repeatedly stated the prospects are very favorable for an unusually large amount of railroad building in the South. From Virginia to Texas the building of railroads and the organization of new railroad companies is the order of the day. The same activity is seen in the West, and the Railway Age says:

The number of new railway enterprises that we are called upon to record from week to week is surprising. Not only are the great railway systems in the West continually pushing out new lines, but numerous independent local organizations are coming to the front, and in almost all cases an examination of the map suggests an excuse for their existence, although it is true that in many cases they will to some extent come in competition with existing lines. As long, however, as railway charters are given to all who ask for them without regard to the public necessity or the rights of existing companies, so long will there be more or less paralleling of roads already built and the building of lines not altogether needed. The disposition to vote local aid to new railways is very widespread in the Western States and Territories, and projectors who can show a reasonably good line and can stir up local ambition by the argument that the specified locality has no railways, or, which is about as good, that it needs a competitor to the existing road, find very little difficulty in securing generous subsidies. There may be danger of carrying this liberality to new enterprises too far, as has been the case in previous periods of great activity in construction which were followed by periods of great depression. At present, however, the growth of the country seems generally to warrant the work of development which is going on so rapidly, and it is certain that the addition to our railway mileage during the next one or two years or more will be extremely large. This growth at least will be a great blessing to railway contractors and the manufacturers of all sorts of railway supplies, as well as to the mercantile and producing interests in the localities affected, although in the long run some of the investors in the new securities may perhaps suffer. If they do it will be only history repeating itself, the much abused "capitalists" furnishing the money for the development of the country and for the profit of large numbers of interests without themselves receiving much if any return. When the money of the Eastern or foreign investor is planted in the securities of a new Western road the Western community has obtained the benefit of it for all time, whether or not it ever pays interest to the original owner.

OUR BIRMINGHAM LETTER.

The Marvellous Growth of Birmingham.

[Special correspondence MANUFACTURERS' RECORD.]
BIRMINGHAM, ALA., August 1, 1886.

Certainly the month past has been a most phenomenal one in the history of Birmingham. Among other things it has witnessed that *rara avis*, a summer boom, and, to make it more singular, a summer boom in the South largely based on Northern investments! That movement is not only still on, but appears to increase in volume from day to day. The weather has been fairly warm for the season, though not oppressive, and the pleasant suburbs of the city afford cool retreats in any case; but it is doubtful if the hottest and most unbearable weather could have much effect on the current situation. Time was when it would not be believed that Eastern and Northern people could be induced to make a Southern journey during the hot months, but the fact is that now they do. For two weeks our hotels and the Lake View resort have been crowded with outside investors, who do not show the least sign of leaving, and property is enhancing in value right along. As the city spreads, and new people and new enterprises rush in, the real estate movement becomes almost too composite for long range explanation. Most of your readers know by this time that Birmingham lies in a valley between two ridges of the lower Appalachian chain. The general trend of the municipal and industrial growth is up and down the valley; but residence property crept up the sides of the hills both ways until the most valuable building lots and localities are on the South and West Highlands. The Elyton Land Co. took the South Highlands in hand some time ago; supplied steam railway communication with the city proper, and provided many other facilities and inducements. The consequence is that land in that quarter is worth an average of perhaps \$5,000 per acre. On the Western Highlands the fashionable development did not begin quite as soon, but since the purchases of Mr. Sam Thomas and the local party supposed to be identified with his movements, the settlement of that end of town has been rapid, and marked by a tremendous rise in values. Property all around the Thomas holding has advanced to \$3,500@4,000 per acre, and hardly any is to be had at such prices. The movement up and down the valley is equally mark-worthy. The special advantage sought in this direction by investors is railway frontage. As the valley is narrow and most of the available area, within easy reach of the Union Station, is occupied, it is plain enough that property with good track facilities will be at a large premium in connection with future developments. During the week a syndicate of local and foreign people has been negotiating for 150 acres just north of the corporation, with a view to utilize the space for manufacturing purposes. It is said that a London party, heavily interested in steel production, is in treaty for the use of part of the tract, which affords good water facilities in addition to close proximity to three leading railways.

Since I wrote last the details of the arrangements by which the Baxter Stove Company, of Louisville, come in, have been perfected. Mr. Geo. C. Kelley, one of the leading hardware merchants of this city,—and of the South for that matter—has taken the presidency. Mr. W. H. Woolridge president of the Baxter Co., at Louisville, is first, and Mr. W. H. Hill, general manager, are second vice-presidents. Space for the plant, a handsome piece of property near the Sloss foundings, was donated by the Elyton Land Co. Some idea of the value of the block may be derived from the statement that Dr. Caldwell asks \$42,000 for the one adjoining. The factory is promised to be in

running order, and turning out 100 stoves per day, by October 1.

The Birmingham Ice Factory Co. has increased its capital stock and decided to build another factory on the North side of town. Some misunderstanding between the management of the Linn Iron Works and their employes has been satisfactorily adjusted, and fears of a serious strike are averted. The labor situation is peaceable, with much promise that it will remain so for a long time to come. I should say that there was less of discontent here at present, in respect of wages and other questions that elsewhere divide labor and capital, than anywhere else in the country.

I wish I could send you the rumors and reports that go around this market at the present time! I can but think that much of the current rush of outside money is due to them. As Mrs. Gamp remarked, "what I know, I know; and what you don't, you don't." On account of my relations to your paper and other interests, and let me hope because, also, I have been found not recreant to past confidences, a good many private views of intended operations have been given me. At this particular juncture it is no betrayal of confidence to state that a project involving not only steel development, but ten millions of investment has been concluded in New York and London, and that the results will be seen within 60 days. The MANUFACTURERS' RECORD will have occasion to open its eyes and columns anent the inauguration of a new Birmingham and Mississippi Valley boom in less than eight weeks.

While Birmingham is looking after its individual interests, it must not be thought that the people here are at all indifferent to what is going on around them. On the contrary, they are glad to see the development of neighboring regions and of the whole South, and are not chary about taking some chances in connection with any of the surrounding movements. Some of our brightest people are investing heavily in salt and sulphur in Louisiana; in manganese in Tennessee, North Carolina and Georgia, and lumber everywhere. At this time there is a sturdy movement, calculated to promote the Southern ship-building interest. A number of our local capitalists are likely to attend the ship-building congress at de Funiak Springs next autumn, and a good deal of Birmingham money will doubtless find its way in that direction. It cannot be doubted that Pensacola is one of the great objective points of this development, and not a little of successful enterprise will tend that way—but more of this in the future.

The iron market is steady and improving, although we are yet unable to quote higher prices. Demand from the East is more active than at any time yet, and the same may be said of the West. If our production were larger we should be able to dominate the Eastern markets at least, as we are not yet able to do; but then it should be remembered that current constructions will double the productive capacity of our plants, and then what Birmingham does will have greater weight. No. 1 foundry iron is quotable at \$14.50@15.00 and grey forge at \$12.25@12.30. It is probable that railway and other developments during the next week or ten days may be of superior interest.

G. B. WEST.

ADVERTISERS wishing to reach the manufacturers of all classes, mining companies, steel, iron and hardware dealers of the entire South, cannot find a better medium than the MANUFACTURERS' RECORD.

The Cranberry Iron Mine.

Knoxville and Its Industries.

[Special correspondence MANUFACTURERS' RECORD.]
KNOXVILLE, TENN., July 31, 1886.

Since my last letter, in the course of my route Southward, I stopped at Johnson City on my way to visit the celebrated Cranberry Iron Mines in Western North Carolina. While awaiting my train at Johnson, I took occasion to visit the famous tannery at that place, of which I had heard so much, and had a very good reason to expect that I should be astonished at its magnitude and surroundings. In both I was disappointed; for while the tannery itself covers an area of say five acres, including all buildings, the amount of work done and the employment of force does not compare with that done and used in establishments of the kind owed by some of our own townsmen. With a force of from 60 to 70 men, some fifteen to twenty thousand hides are worked up per year, chiefly Chicago, Kansas City and St. Louis hides, together with some few importations from England. The machinery throughout is of the very best description and propelled by two engines of 65 and 30-horse-power, respectively. The company, notwithstanding the fact that they appear to have as much as they can do, say that they are not making a dollar, an assertion most probably made with that peculiar conservatism which characterizes the people of this section, and which is made with the hope of avoiding any possible competition which may arise by the establishment of similar industries. I have noted this in other instances. Connected with the Johnson City Tannery is a farm of several hundred acres upon which cereals of all kinds are raised, which should add very materially to the profit side of accounts.

I took the train from Johnson City over the narrow gauge road of the East Tennessee & Western North Carolina line, and passed through a section of country which, for wild grandeur of scenery, far exceeds anything I ever saw. I have seen some of the most noted scenes in the mountain districts of the Alleghanies and Blue Ridge; made the ascent of the Peaks of Otter; washed my hands in the clouds on the Kaatskills; but in all of these I saw nothing to compare with the wonderful gorge through which we passed on our way to Cranberry. The road runs along the sides of mountains, through three tunnels, twisting and turning as though in uncertainty as to how to get out of the difficulty in which it is placed, the cars running necessarily at a slow rate of speed up the steep ascent, skirting along under precipitous crags of seemingly solid rock, rising sixteen hundred feet above the road, passing over trestles, two in number, one being 96 feet from the bed of the stream below, the view ever changing and always harmonious, the whole being invested with a grandeur sublime and awe-inspiring. Finer subjects for the artist's pencil could not be imagined; the difficulty would be to accurately portray them.

Before the survey was made through this gorge to establish the line of the road, the foot of the white man had never made its impress there. The engineers themselves were let down by ropes to set their instruments, while the mules used in the work of grading the road were lowered into the gorge by block and tackle, and never got out again until the road was completed. The feat of engineering is one of the most remarkable in this or any other country.

Passing through the gorge and arriving at an altitude of about 3,200 feet, we find ourselves at the foot of Roan mountain, lifting its towering head 6,200 feet above the sea level. On the top stands the Cleveland hotel, owned and kept by Gen. Wilder, of war fame, which is a great resort for persons from all parts of the South. The line dividing the States of Tennessee and North Carolina runs straight through the hotel. In the dining room one table directly strad-

dles the line, so that parties at the same board can dine in the two States. The line is said also to equally divide the kitchen range, so viands are cooked in either side respectively, according to Tennessee or North Carolina tastes. The view from Roan mountain includes seven States, viz: Virginia, West Virginia, Tennessee, North Carolina, South Carolina, Georgia and Alabama.

Arriving at Cranberry, one is surprised to find oneself ensconced in one of the most beautiful of hotels, known as "The Cranberry," having every convenience of a first-class city hotel, and situated on the crest of a small mountain, 3,200 feet above the level of the sea. It is entirely hemmed in by mountains, and is a very well patronized summer resort. The mines, however, being my objective point, I visited them the morning after my arrival, and was well repaid in so doing. These mines produce, as is well known, the famous magnetic and semi-magnetic ores, running from 50 to 70 per cent. of pure metal. Frequently crude specimens taken from the mines are hammered into tools, without being forged, so great is the purity of the ore. The mines extend from the Doe river into Tennessee, twelve miles in a direct line. At first tunnels were made in mining, but, finding the mountains to be almost solid iron, that mode was relinquished, and "skinning the mountain," or outside mining adopted. Six hundred men are employed, and the manufacture of pig iron at the smelting furnace immediately on the ground amounts to twenty-four tons per day. The ore from the Cranberry mines requires no fluxing; in fact, it is frequently used to flux other ores. There is no limit to its market, and the mines may be said to be the most important of the iron mines of the South. The area of the works at the mines is about 100 acres, including all the buildings used, among which are a large store, a church and the residences of the miners and officers of the company. The first forge worked in that section of country was built by one Abram Johnson, in 1760 on the Doe river. He died only a few years ago at the age of 82 years, having lived long enough to see a marked change since his humble effort was established.

Leaving Cranberry I came to Knoxville, a city of 30,000 inhabitants, and though a seemingly thriving and growing place, its conservatism is such as to clog the wheels of rapid progress. It comes the nearest to the "get-all-you-can-and-keep-all-you-get" idea of anything that I ever saw. The community generally from its own assertion is very appreciative, and all that, but it will not go out of its way to show said appreciation.

The local industries are varied and important; among them may be mentioned the "Knoxville Car Wheel Company's" works. These works employ fifty men, and have a capacity of 150 wheels a day, besides doing a general machine work, repairing locomotives, etc. The machinery is in many respects unique, one piece being worthy of mention, viz: A hydraulic press, made by the Niles Tool Works, Hamilton, Ohio. With it one man does the ordinary work of five. A pair of wheels are put on the axle in seven minutes, including handling. The pressure is from 2,200 to 2,500 pounds to the square inch, or 40 to 50 tons to each bearing. There is also a double headed axle lathe, which makes the bearings at each end of the axle at the same time. The works make all kinds of wheels from 12 to 32 inches in diameter. Its wheels are used principally by the East Tennessee & Florida systems of railroads.

The Brookside Cotton Mills, which bids fair to be one of Knoxville's most important industries, is a new enterprise which started about the middle of May last. At present there are some 90 hands employed in the manufacture of a fine quality of domestic sheetings. A Hamilton-Corliss engine of 116 horse-power drives upwards of 10,000

spindles at this time. When the mills get fully under way, there will be 300 looms, 20,000 spindles and 40 cards at work. They have a new method by which the speeding is reduced from three processes to one, or from a 50-100 hank roll, to produce from 14 to 20 yarns. There are a few frames of this machinery in the Everett Mills at Lawrence, Mass., but it is used throughout in these mills. The process originated at the Williston Mills, East Hampton, Mass.

The Knoxville Woolen Mills is a magnificent enterprise. The mills are equipped throughout with the finest kind of machinery, chiefly from the Bridesburg Manufacturing Co., of Philadelphia. The engine is of 200 horse-power. One hundred and fifty hands are employed, making strictly first-class all wool jeans, some shipments of which reach our market. The capacity is 2,700 yards per day, with 104 looms.

There is the Knoxville Iron Company which has a capacity of 40 tons per day, manufacturing bar iron and rails, and using a neutral pig iron. The Knoxville Buggy Works which makes spring vehicles of all descriptions. The Southern Car Company's Works with a capacity of 6 flat, or 2½ box cars per day, employing 90 men. They have just contracted with the East Tennessee, Virginia & Georgia Railroad, to furnish 200 flat cars.

The "Standard Handle Co."—too conservative to answer questions as to capacity, &c. Don't give any information. Appear to be as busy as possible and don't want any competition here. The fact that Mr. Jacob Edelin, of Baltimore, is about to establish a handle factory here may not be to them an agreeable one to contemplate.

A very interesting enterprise here is that of the "American Button Co.," which manufactures a beautiful button of various sizes, from the shell of the ordinary mussel, taken from the Tennessee and other rivers. The manufacture is very simple, four or five buttons being cut from each shell. Forty hands are employed with a capacity of 150 gross per day. The trade in these buttons is very extensive North and South, many buyers being in Baltimore. While looking at the manufacture I could but ask myself: where is all the enterprise of our city, that sufficient cannot be found to start a factory of this sort? The millions of bushels of clam shells which could be utilized in manufacturing buttons, are simply used in making roads for the most part, and they could serve the same purpose just as readily after having four or five buttons cut from each shell. That we should have such wares brought to us for sale, when we have the suitable material for their manufacture at our own door, and all that is needed to put it into use is a little enterprise, is something to contemplate with anything but pleasure. If Baltimore is to keep up with the stride of progress in other cities, she must become a manufacturing center, so she had better begin at once, and with a button factory utilizing clam shells.

The great marble interests of East Tennessee are almost too formidable a subject to note in this letter, already lengthy, but they cannot be passed by with a single word.

The Tennessee marble interests were first started in Hawkins county, some sixty years ago. Within the last six years wonderful developments have been made in Knox county, in the beautiful variegated and pink marbles. In fact the whole valley of East Tennessee seems to be one bed of marble. There are some thirty quarries around Knoxville, which space will not allow me to name. One of them, the Crescent Marble Company, I will mention on account of the peculiar quality of stone it quarries. It is a grey marble and analysis shows it to be a very pure carbonate of lime. It will not stain or tarnish in spots, thereby making it the most excellent building material extant. Any stain, whether ink, tobacco juice or what not, can be removed by a simple application of soap and water. Channelling machines are used in these quarries which

have a cutting capacity of 150 feet per day. This marble weighs 180 lbs. net to the cubic foot, being denser than any other marble used, and will bear a pressure of 12,000 lbs. to the square inch. The company has just completed a reorganization, giving increased facilities for business, and very soon it proposes to place supplies of their various marbles in every market of the country, not excepting any.

The people of Knoxville complain bitterly of the lack of sufficient railway facilities. It is said that the R. & D. Railroad is quietly perfecting its arrangements to build a road from Unaka to Maryville and reach Knoxville by the K. & A. Railroad. This may prove correct, but the fact that certain "material encouragement" from the Knoxville people will be expected by the Richmond & Danville folks, will be the stumbling block to its progress, the people being perfectly willing to take all they can get, but are debarred helping on an enterprise by reason of their abounding conservatism.

I leave to-morrow for the "old North State," and you shall next hear from me from Asheville. W. M. P.

A Practical South.

The Atlanta Constitution conveys some useful information to the Louisville Courier-Journal as follows:

We regret to call the attention of the Courier-Journal to the fact that Mr. Norwood, who has recently been re-nominated for Congress in the first Georgia district, announced in his speech before the Convention which nominated him, that he has never been a free-trader, but that he has always been in favor of protection. And yet Mr. Norwood voted in favor of considering the Morrison free-trade scheme. This is a very sad affair altogether, and it is to be hoped that the Courier-Journal will not abuse Mr. Norwood any more than is absolutely necessary under the circumstances.

Our esteemed contemporary may find it necessary to read Mr. Norwood out of the party, but he will remain in the party all the same, and the Courier-Journal may find itself in the position of little Miss Muffet, who sat on a tuffet, eating her cream and whey, when a great big spider came and sat down beside her, and drove Miss Muffet away.

The truth of the business is, the Old South has become the New South, and the New South is a very practical South. This will account for the present and forthcoming manifestations that will cause the agents of the whiskey ring to grow bald with bitterness. Our young and growing industries must be fostered; our farmers who are now compelled to plant all cotton must be given the benefit of home markets.

It is a noticeable fact that the South is becoming more practical every year. And as our farmers shake themselves free from old ideas and theories they will see that the establishment of manufacturing communities throughout the South will lead to a demand on the part of the operatives and others for products of the soil other than cotton. Such a demand is what is badly needed at the South. Such a demand will do much to add to the prosperity of our agricultural community. When the farmer sees that it is money in his pocket to no longer plant all cotton he will cease to do so.

We submit to our readers in the interior of this State and Mississippi whether it is not better to take practical views of economic questions. It is very easy to talk about "robbing the people," and an "iniquitous system," but will our people be robbed when the South shall be dotted with manufacturing establishments, and the farmer shall find a home market for the products of honest toil? We think not. And many of our people agree with us, and the number is increasing each year. Our section is becoming "a practical South."—Mobile (Ala.) Register.

The Cotton Crop.

In Bradstreet's July report of the condition of the cotton crop, it is said:

The present report deals with the progress of the crop from June 22 to July 20, the average date of the mail replies. The condition of the plant in the June report was placed at a little below fair, taking the cotton belt as a whole. The unfavorable effect of a rainy June in the southern Atlantic and eastern gulf States was noted, and the marked difference in the reports coming from the southwest was also shown. The division of the cotton belt into two regions, a wet and a dry one, was explained, and the comparison thus made was such as to show that the southwest was highly favored by weather conditions, while the eastern half of the cotton belt was shown to be in a less favorable state.

The present report shows that the weather conditions, as a whole, during the period under review, were well toward bad in the Carolinas, Georgia and Alabama, between fair and bad in Mississippi, and about fair in Louisiana. In Texas and Arkansas, on the other hand, the general condition ranged at good, and in Tennessee it was nearly good. Last year at about this time the crop had reached its most favorable state, and the outlook was undoubtedly good. The contrasts shown in the reports from the two sections of the belt could hardly be greater, and it seems evident from the situation that all calculations as to the size of the crop hereafter made will have to be made with a full perception of the difference thus existing. The reason given for the bad condition of affairs shown is to be found in the same cause which has been operating since early in the spring. Briefly speaking, this is an over-abundance of rain. The prevalence of fairly reasonable weather accounts for the good condition of things in the southwest.

The outlook, as will be seen in the comparative summary tables, is at present bad in the "wet belt," and the process of blooming and fruiting is in consequence not at all satisfactory. No shedding has occurred of any moment, because of the fact that in consequence of the lateness of the season there was little or nothing to shed. The effect of the heavy rains, lasting in some States six weeks to two months with but slight intermission, has been to cause a large growth of stalk to the plant and a corresponding absence of forms or squares. The liability of a plant thus situated to be affected by a sudden drouth is great, and in case this occurs much loss will inevitably result. Some complaint comes from Mississippi of trouble from this cause. The plant in those States is very full of sap. The total absence of any damage from worms is an encouraging feature, especially in Texas, where at this time last year much damage had been reported. Briefly summarized, the plant conditions in several States are well toward bad, but as the trouble at present is one which it is possible to combat, though at considerable expense, it is still possible for good weather to create a marked improvement. The continuance of the ruling weather conditions in the favored section of the belt will undoubtedly secure a large crop. In view of this fact any predictions of ultimate and disastrous damage now made are apt to be merely guesswork and may tend to mislead.

Telegraphic advices dated July 29 and 30 state that the weather generally is dry and hot. In the Carolinas this is causing some uneasiness because of the fear of shedding. In Georgia, Alabama and Mississippi the crop is progressing well. Reports from Texas indicate that rain is beginning to be needed in some counties, but this is, as yet, not general.

The latest advices, as gathered from the Southern press, indicate a steady improvement in the condition of the cotton crop, due to the more favorable weather of the last few weeks. The Southern papers are now, as a general thing, taking a very hopeful view of the crop, whereas two or three weeks ago they were quite despondent.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

ALABAMA.

The Birmingham Ice Factory Co., Birmingham, Ala., have increased their capital stock from \$40,000 to \$75,000, previously reported. A new 30-ton factory will be erected.

It is stated that a shoe factory will be started at Anniston, Ala., next fall, by J. M. Waters.

Josiah Morris, Montgomery, Ala., will erect a large brick building at Birmingham.

The P. Byrne Manufacturing Co., of Nashville, Tenn., have purchased two acres of land at Birmingham, Ala., and will, it is stated, move their elevator works and foundry to that city.

The Baxter Stove & Manufacturing Co. has been organized at Birmingham, Ala., with George C. Kelley as president; W. H. Wooldridge, of Louisville, Ky., vice-president, and J. G. Sisson, of Louisville, secretary and treasurer. The company will erect the stove foundry previously reported to be established by a Louisville company. Work has been commenced on the foundry, which will be 24x280 feet. About 100 men will be employed at the start.

The Alabama Great Southern Railroad will relay their track with steel rails. Rails for 40 miles have just been bought.

Beatty & Son will erect a planing mill at Clement's Depot, Ala. Have ordered the machinery.

A planing mill is being erected at Birmingham, Ala., by W. R. Hill & Co.

The Birmingham Brewery, Birmingham, Ala., will erect steam bottling works.

The Milner Spring & Birmingham Street Railroad Co., capital stock \$25,000, has been incorporated at Birmingham, Ala., by E. Eastman, John T. Milner, James T. Moore, C. F. Eastman and R. E. Smith.

The Union Manufacturing Co., Erie, Pa., are, it is said, negotiating with parties in Brewton, Ala., for the removal of their works to that place.

The Union Lumber Co. has been organized at Brewton, Ala., by E. Downing, J. C. Avent and F. M. McCall, to operate the Kirkland lumber mill. The company have purchased a lot of new machinery to put in the mill.

G. C. Harold, A. Harold and J. T. Porter have incorporated at Brewton, Ala., the Brewton Log Co.

A. Sanders has bought a rope factory at Tuscaloosa, Ala., and converted it into a yarn factory.

Mr. Brown, of the Columbus Iron Works Co., Columbus, Ga., will erect a 30-ton ice factory at Birmingham, Ala. Has purchased a site and will soon begin work.

Proposals for erecting a wooden and three iron bridges in Jefferson county, Ala., will be received until August 13 by James C. Long, Birmingham.

ARKANSAS.

The contract to erect the Board of Trade building at Little Rock, Ark., has been received by Pettefer Bros., at \$18,678.

C. A. Guthrie and others are developing gold, silver and copper mines in Searcy county, Ark., 12 miles from Marshall. Smelting works are reported as being erected at the same place by St. Louis capitalists.

Louis Fletcher is making arrangements to erect a smelter near the new town of Joplin, in Montgomery county, Ark. A saw mill is reported to be built at the same place soon.

FLORIDA.

A planing mill is being erected at Sanford, Fla., by William F. Cotter.

It is stated that a saw, shingle and grist mill and gin and a starch factory are to be erected at Pine Island, Fla.

A moss factory is being erected at Cedar Key, Fla.

A 200 room hotel is reported to be erected at Punta Gorda, Fla., by the Florida Southern Railroad Co. (office at Palatka).

W. L. Wittich, lately reported as enlarging his saw mill at Caryville, Fla., and as having purchased a saw mill at Chipley, will move it to Caryville.

A. Springer and H. L. Kingsbury have contracted for a 12-ton ice machine, which they will erect at St. Augustine, Fla.

Chemical works for manufacturing baking powders, flavoring extracts, medicines, &c., are to be started at Jacksonville, Fla., soon.

The East Coast Railway & Steamship Co. has been incorporated in Florida by E. A. Protois, C. F. Smith and E. C. Sammis, to build a railroad from Titusville to Tuttle Harbor. The road will be 285 miles long.

GEORGIA.

The Fulton Cotton Spinning Co., Atlanta, Ga., will build a large addition to their factory.

C. A. Moross & Co., Chattanooga, Tenn., previously reported as to build lime works, have purchased 160 acres of land in Catoosa county, Ga., and will open large stone quarries. They will also erect one or more lime kilns at the quarries.

The Oglethorpe Hotel Co., Brunswick, Ga., have let the contract to build their hotel, previously reported, to H. C. Jackson, of Chattanooga, Tenn. It will cost about \$60,000.

Boyd & Baxter, Atlanta, Ga., have lately increased their capital and put new machinery in their furniture factory.

The Covington & Macon Railroad (office Macon, Ga.) will build a branch road to Monticello.

A grist mill and gin are being erected at Blakely, Ga., by James Stewart.

T. B. Innis, of New York, has received the contract to build the Savannah & Tybee Island Railroad, previously reported. D. G. Purse, Savannah, Ga., is president.

KENTUCKY.

Proposals will be received until September 1, by John McLeod, Courier-Journal building, Louisville, Ky., for the grading and masonry of the Louisville Southern Railroad from Louisville to a connection with the Cincinnati, New Orleans & Texas-Pacific Railroad, about 84 miles.

Samuel P. Webb & Co., Nashville, Tenn., have bought the lease of the Wallace coal lands at Caseyville, Ky., and will improve them and build a tram road.

George M. Fletcher and John M. Bass, of Nashville, Tenn., are in Owensboro, Ky., prospecting with a view to building a street railroad.

LOUISIANA.

Bids will be received until August 10, for erecting a school building at New Orleans, La., by Robert H. Bartley, chairman.

The electric light works previously reported to be established in New Orleans by the Edison Company (W. Oswald, manager N. O. office) are the same as those for which Geo. B. Lawrason was reported in last issue as asking for permission to build.

The Collier Co., the Louisiana Branch International Fibre Co., and the Franz Lutz Fibre Co. have been recently organized at New Orleans, La., to cultivate and manufacture ramie.

The Southwestern Brush Electric Light Co., New Orleans, La., are enlarging their plant at a cost of \$75,000.

The American Fatty Products Manufacturing Co., capital stock \$100,000, has been incorporated at New Orleans, La., with R. M. Ong as president, Leon F. Haubtman, vice-president, and A. C. Landry, secretary and general manager, to manufacture fertilizers, soap, candles, &c. Plans have been prepared and works will soon be built.

MARYLAND.

A new engine will soon be erected at the Hoffman mine, Eckhardt, Md.

It is rumored that large steel works are to be established at Baltimore, Md.

C. A. Walt & Son, Westminster, Md., have received the contract to erect an asylum building at Elkton, at \$5,942.

The firm of Helsby & Richards has been formed at Baltimore, to manufacture paper boxes.

MISSISSIPPI.

The Meridian Phosphate Co., Meridian, Miss., will rebuild their works recently burned.

Soda bottling works have been erected at Yazoo, Miss., by Henry Brantley.

NORTH CAROLINA.

J. D. Smalls & Bros., Salisbury, N. C., have erected an iron and brass foundry.

The report that Sprague & Carson, of Old Fort, N. C., contemplated moving their works to Marion was incorrect.

E. G. Carrill and T. I. Van Gilder have let the contract to build their new hotel at the White Sulphur Springs, near Asheville, N. C., previously reported, to E. J. Armstrong.

SOUTH CAROLINA.

The Newberry Cotton Mills, Newberry, S. C., previously reported as to add new machinery, have purchased 4,000 spindles and 120 looms, which will be put in by November 1.

C. C. Habenicht will build a brick addition to his hotel at Columbia, S. C.

H. S. Creed will rebuild his mill at Johnston, S. C., reported last week as damaged by boiler explosion.

The Columbia Water Works Co., Columbia, S. C., whose works were reported last week as damaged by explosion, are negotiating for new machinery.

S. M. Graham has erected a grist mill and gin at Mayesville, S. C.

TENNESSEE.

S. M. Carpenter, Cleveland, O., has purchased the Wason Car Works, at Chattanooga, Tenn.

Maurice Blaufield, Knoxville, Tenn., will not establish a tobacco factory as previously rumored.

A \$10,000 addition will be erected at the Cleveland Female College, Cleveland, Tenn.

T. J. Ellis will put some new machinery in his flour mill at Coopertown, Tenn.

Harpe & Zimmer, White Bluffs, Tenn., contemplate erecting a saw mill near Nashville.

G. E. Bennie & Co., Thompson Station, Tenn., have moved part of the machinery of their bucket factory into Maury county to manufacture staves.

The Scottish Carolina Timber & Land Co. will, it is reported, move their mills from Newport to Knoxville, Tenn.

John C. Griffiss and J. A. Caldwell will erect a four story building at Chattanooga, Tenn.

B. Lowenstein & Bros., Memphis, Tenn., invite proposals for erecting a five story brick and stone building, 75x150 feet. Also for steam machinery for the building.

It is reported that the Knoxville Iron Co., Knoxville, Tenn., are to establish a Bessemer steel plant.

Hart Bros., of Wisconsin, have bought a lumber mill at Alexander, Tenn., and will build a tram road.

A Methodist church, to cost about \$18,000, will be erected at Murfreesboro, Tenn.

Mr. Conn, Atlanta, Ga., has purchased 5 acres of land at Chattanooga, Tenn., and will erect a large barrel factory. Is now negotiating for the necessary machinery.

The rolling mill reported last week to be erected at Nashville, Tenn., by Cherry, Morrow & Co., will be erected by a company now being formed. The capacity will be 40 tons daily, and from 100 to 150 hands will be employed. Malleable iron works will also be erected by the company, to employ over 100 hands. About \$100,000 will be invested in the plant. The machinery has been purchased and necessary buildings will be erected at once.

W. W. Taylor, of Philadelphia, Pa., is in Bristol, Tenn., negotiating for the erection of water works.

W. S. Bell and H. F. Davis, of Atlanta, Ga., will, it is reported, erect a saw mill at Chattanooga, Tenn., and contemplate erecting a planing mill.

TEXAS.

Falls county, Texas, will soon advertise for bids for building a court-house at Marlin, to cost about \$48,000.

C. C. Frost is rebuilding his gin at Montague, Texas, previously reported as burned.

It is stated that arrangements are being made to erect a \$40,000 cotton compress at Schulenberg, Texas.

Waco, Texas, will erect a \$35,000 school building.

An effort will be made to organize a stock company to build a 100-barrel roller mill and an elevator at Whitewright, Texas.

The Gulf & Pacific Railway Co., capital stock \$6,000,000, has been incorporated in Texas, to build a road from Dallas to the New Mexico territory.

John H. Johnson has established a fruit evaporating and canning factory two miles from Marshall, Texas.

The capital stock of the Gainesville, Henrietta & Western Railway Co., reported last week as incorporated in Texas, is \$900,000.

W. T. Booth, J. T. E. Waltney, J. L. Ware, D. E. Taylor, J. L. Ballinger and others have chartered at Honey Grove, Texas, the Honey Grove Compress Co., capital stock \$100,000.

The Diamond Mill Co., Sherman, Texas, have put electric light machinery in their mill.

VIRGINIA.

A street railway is to be built from Old Point Comfort to Hampton, Va.

LOCKWOOD, GREENE & CO. MILL ENGINEERS

Office, 65 Westminster St., Providence, R. I., Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.

The Seaboard & Roanoke Railroad are erecting a large round-house near Portsmouth, Va.

Kingsley Bros., Hamilton, Va., recently reported as to build a creamery at Warrenton, Va., have also completed one at Broad Run bridge, in Loudon county.

W. M. Watts will probably be superintendent of the Victoria Furnace at Goshen Bridge, Va., lately reported as leased and to be put in operation by C. P. Huntington and others, of Pennsylvania. Mr. Watts writes us that all matters are not yet definitely determined.

Bids for building water works at Chatham, Va., will be received until September 1 by W. I. Overby.

Surveys are being made for an extension of the New River branch of the Norfolk & Western Railroad from Pocohontas, Va., to the Ohio river.

The Craig Co., previously reported, have accepted a proposition to erect a charcoal furnace at New Castle, Va., and have appointed a committee to select a location.

It is said that Pennsylvania capitalists are investigating the advantages of Warrenton, Va., as a location for a machine shop and foundry.

A creamery is contemplated at Fincastle, Va.

A stock company will be organized at Roanoke, Va., to erect an ice factory.

WEST VIRGINIA.

The Beechwood Coal & Coke Co., capital stock \$25,000, has been incorporated at Beechwood, Fayette county, W. Va., to mine coal and manufacture coke, by Isaac W. Rowe, John D. Campbell and E. W. Bridge, of Caperton; Charles C. Beury, Stone Cliff, and J. S. Beury, Echo.

BURNED.

The large flour mill of Buck & Hoff, Manchester, Va.; loss \$75,000.

The cotton mill of the Old Dominion Manufacturing Co., Manchester, Va., damaged \$15,000 by fire.

Col. Graves' saw mill at Tchula, Miss., damaged by boiler explosion.

J. T. Chappell's grist and flour mill and gin near Dublin, Ga.

The box factory of J. H. Thiemeyer & Co., Baltimore; loss \$20,000.

Planing and Shingle Mill.

DAWSON, GA., July 29, 1886.

Editor Manufacturers' Record:

We expect to build a planing mill and shingle factory. Work will begin on it about August 1st.

BALDWIN & CO. & GEISE.

Bids for Water Works Wanted.

CHATHAM, VA., July 30, 1886.

Editor Manufacturers' Record:

I will until September 1st receive bids for the erection of water works for Chatham, according to plans on file in my office.

W. J. OVERBY,
Chairman of Committee.

GAINESVILLE, TEX., July 26, 1886.

Editor Manufacturers' Record:

The compress at Jefferson, Tex., will be taken down and removed to Greenville, Tex. C. J. Wise, Jefferson, will furnish particulars: RUSSELL & GREEN.

PARIS, TEXAS, July 30, 1886.

Editor Manufacturers' Record:

The Paris Gas Co. contemplate the introduction of electric light in connection with our present system of gas works. Our president is now making an investigation, and whether they be introduced or not will depend upon his reports. C. H. CURTIS, Secy.

New Furniture Factory.

NEW ORLEANS, LA., July 26, 1886.

Editor Manufacturers' Record:

We are at present making furniture and coffins at 1089 Magazine street, but will by 1st September remove to our new factory on square of Batture, between Robert and Uppeline street, 6th district. The factory, 80x100, is of corrugated iron. The finishing and store room, 40x80, 2 story, also of corrugated iron. L. J. FLEURY & CO.

Building Large Works.

MERIDIAN, MISS., July 30, 1886.

Editor Manufacturers' Record:

We have commenced the erection of building 88x100 feet, for machine, wood-working and erection shops; will be iron siding and tin roof. Expect to move into permanent quarters about September 1st. Business very good. PROGRESS MFG. CO.

Want to Build a Saw Mill.

NOBLE LAKE, JEFFERSON CO., ARK.,

July 23, 1886.

Editor Manufacturers' Record:

A Mr. Friedheim and myself wish to put up a saw mill when we can furnish, say ten millions of red gum timber, from 10 to 36 inches diameter square. This timber is coming into use in foreign countries; is susceptible to a very high polish. Two car loads were shipped not long since from here, and we are awaiting results. We are willing to buy the machinery complete, first-class, meaning latest improved and all appurtenances. We have a water mill now, but it is too small for this big timber. During the war the coal extracted from a mine in this section was pressed and the oil obtained used for tanning purposes. SOL FRANKLIN.

TEXARKANA, TEXAS, July 26, 1886.

Editor Manufacturers' Record:

I will commence at Sherman, Texas, tomorrow to make a thorough test by digging and drifting; in case that fails will have recourse to the original plans and specifications, i. e., make an artificial dam and catch surface water. I have signed no contract yet, and will not do so until I first ascertain the water supply. M. P. KELLEY.

Building Big Cigar Factories.

KEY WEST, FLA., July 29, 1886.

Editor Manufacturers' Record:

We are building factory, three-story brick, to cost about \$20,000, for Del Pino Bros. Gato's factory, not yet under contract, will cost about \$30,000. At least five other factories are being estimated on here now—all cigar factories. HARVEY & HILLIARD.

NASHVILLE, TENN., July 24, 1886.

Editor Manufacturers' Record:

The Southern Horse-Collar Coupling Association was incorporated on the 13th instant. Object—to manufacture the Eureka Collar Coupling or Fastener; also, horse collars of all kinds. GEO. MARSH.

To Build a New Mill.

CHATTANOOGA, TENN., July 26, 1886.

Editor Manufacturers' Record:

We have bought a most desirable piece of land, just east of the city limits, to which we intend to remove our entire business, of course putting up a new mill. When we can do so cannot now be positively stated, but we think not before next spring. SHIERS & WOODBURN.

PALATKA, FLA., July 30, 1886.

Editor Manufacturers' Record:

I am going into the wood business, and have bought part of my machinery, but will need more. J. E. LUCAS.

Another Creamery.

HAMILTON, VA., Aug. 2, 1886.

Editor Manufacturers' Record:

We have a branch of our Hamilton creamery now in operation at Broad Run Bridge, where the cream is separated and shipped to this place. KINGSLEY BROS.

Building Saw Mill.

WILSON, ESCAMBIA CO., ALA., July 28, '86.

Editor Manufacturers' Record:

I am building a steam saw mill at this place. F. J. MCCOY.

JOHNSTON, S. C., Aug 2, 1886.

Editor Manufacturers' Record:

I will rebuild my mill shortly, and continue in the milling business. H. S. CREED.

Will Build Large Shops.

HOUSTON, TEXAS, July 31, 1886.

Editor Manufacturers' Record:

The Southern Pacific Co. are now making arrangements to build extensive shops here. They say they will commence operations in about 30 days. Z. T. HOGAN.

RECTOR, ARK., July 31, 1886.

Editor Manufacturers' Record:

I expect to make one kiln of brick, probably 150,000, between this and September 15th. W. H. LEHMAN.

NEW YORK, August 2, 1886.

Editor Manufacturers' Record:

This company is about to build a branch from Point Pleasant to Sherman.

J. S. WELLS,
Sec'y St. Louis, Ark. & Tex. R. R. Co.

Will Enlarge Mill.

PENSACOLA, July 26, 1886.

Editor Manufacturers' Record:

The Glasgow Mill, Caryville, now has one circular and gang and planer. Will stop 1st August and put in another circular, making total capacity 90,000 daily, and capacity planers 20,000 daily. Finest situation in the South, with unlimited forest of virgin pine, 100 miles by rail and 150 by water, east of Pensacola. Will move the Chipley Mill to Caryville also, and put it up. Its capacity is 15,000 daily. W. L. WITTICH.

MINING NOTES.

By T. K. BRUNER, Salisbury, N. C.

YADKIN CHLORINATION WORKS.

Mr. John Jacobs, superintendent of the Yadkin Chlorination Works, located near Salisbury, is of the opinion that chlorination as a method, practical and reliable, is growing in public favor. It is *par excellence* the method for extracting gold from the richer pyrite, chalcocopyrite, and other complex ores commonly found in the gold fields of the Virginias, Carolinas and in Georgia. It is not the method for the low grade complex ores, since the cost per ton of reducing and extracting is about equal to the average value of the low grade ores of the South. But in the vast territory enumerated above there are millions of tons of sulphide ores of sufficient value to be worked by the chlorination process with a reasonably fair profit to the miner. This is not a random remark, but is based on information gotten by an investigation of the process and from deductions drawn from the returns of ores actually worked by the process from the gold regions of different Southern States. The fact that Georgia produces a sulphide ore of sufficient richness to justify mining, shipping, draying and chlorinating, is an encouraging fact and should hasten the de-

velopment of sulphide ores in that State. Ores from that State have been sent to the Yaddin Chlorination Works and have yielded a reasonable return to the miner. And so with ores from the other States. The works are fitted out with the Meares Chlorination Process, on which Mr. Davis, of Philadelphia, (chief owner of the Yadin plant), has made some important improvements. Just now the works are receiving a consignment of cobbled and concentrated ores from the famous Rudisil Mine, in Mecklenburg county. The management of the Gold Hill Mines, in this county (Rowan) have under contemplation the question of chlorinating their complex ores, and will probably test the process thoroughly. Mr. Jacobs is confident that he can save the gold for them. The present appliances for saving gold at the mines of the Gold Hill Company are not suited to the ore—at least does not save a large enough percentage to justify a continued use. By carefully concentrating the residuum of the present amalgamating plant and treating it by the chlorination process, the best possible results would be obtained.

INTEREST IN MINING.

There is seldom more interest manifested in mining in this State than at present. Prospecting parties of practical miners, of students of science from Yale and other leading institutions of learning in America, of capitalists from various parts of this country and from England are traveling over the State in search of gold, silver, copper, iron, the rarer useful minerals, and for investments of various kinds. Indeed, this is not confined to minerals, but includes interest in agricultural lands, forests, water-powers and stock raising. The light of the progressive and industrial era now dawning all over the South has touched the azure hill tops of Western North Carolina. There is a great future in store for that section.

FALSE PSEUDOMORPHS OF QUARTZ.

This is a title of a paper prepared by Prof. W. E. Hidden, of Stony Point, Alexander county, N. C., and published in the "School of Mines Quarterly," for July of this year. In nearly all of the works, treating on the mineralogy of the State, mention is made of pseudomorphs of quartz, after barite, calcite and *et cetera*. About this there has always been a division of opinion. Specimens of these pseudomorphs, so called, are of great interest, and are "conspicuous for their ever varying and unsymmetrical forms, their inconstant angles, and for being almost invariably hollow, like grodes." Many of these were water-bearing and were much sought by collectors. Prof. Hidden has made a careful study of all the localities in this State and in Georgia, where pseudomorphous quartz has been found, and promulgates this conclusion, "that these forms of quartz are pseudomorphs of the interstices, between crystals of some unrecognized hexagonal mineral that crystallized in thin, flat tabular forms." He goes on to say that "sections of many of these water-bearing crystals (?) present an interior of bright transparent crystals, or of mammillary chalcedony; while the structure of the walls is semi-radiated from the exterior. Careful examination of the surfaces, particularly of the forms from Georgia, shows a bright series of triangular markings (angles 60°) on all sides. Now these markings are exactly what we would expect by the slow deposition of quartz on the basal pinacoid of a uniaxial crystal (hexagonal or rhombohedral), or of the deposition of quartz from solution in a vein filled up with meshed and netted crystals which, being thin, presented only basal planes for contact surfaces. What the original mineral was is not shown by the specimens. The casts of crystal cavities in the larger masses show an unmistakable hexagonal prism with a large development of the basal pinacoid, (these two planes identified by striations on the quartz), and this characteristic is persistent at all three localities."

Steel Shovels.

We present in this issue an illustration of the leading styles of the shovels, spades, scoops, etc., made by Messrs. Wm. Chisholm & Sons, Cleveland, Ohio, who have gained a wide reputation for their goods. The distinguishing feature of these shovels is that each blade is made from a single piece of solid cast steel, thus avoiding any weakness that might result from fastening the socket or strap to the blade by riveting or welding. The value of this will be readily appreciated.

Of the ordinary square or round point shovels they make two styles, viz: The



FIG. 1.



FIG. 2.



FIG. 3.

regular full socket shovel, which has the preference to work in coal, ore, stone, gravel, etc., and the Chisholm patent plain back or hip socket shovel, for use in clay or sticky soils, where the open back of the regular socket might be objectionable. Figures 1 and 2 illustrate respectfully these two styles, in both of which the blade and socket, or half socket, are made of a single piece of steel without welding.

Figures 3 and 4 represent their long and D handle round point socket shovels. The above are also made with thick center lengthwise the blade, where shovels of more than ordinary strength are required for special work.

Fig. 5 shows the very popular coal shovel made by this firm. This tool is at once both light and strong; has no rivets or straps in the way to catch in the coal and tear off before the shovel is half worn out, and, being well balanced and proportioned, is light and easy in the hand.

Fig. 6 represents their coal scoop so largely used in the anthracite regions of Pennsylvania and elsewhere. These scoops are made from best materials, with thick center lengthwise the blade or bowl, giving greater strength, it is said, than can be obtained by any other method of manufacture. These scoops are also made with wide or glaring mouth for handling corn in the ear, for which use they have a large sale.

More detailed information in reference to these and other styles of goods not here illustrated may be had from their descriptive catalogue, which will be mailed on application.

If you are not already a subscriber to the BALTIMORE MANUFACTURERS' RECORD, send us \$3 and you will receive it regularly for one year, or six months for \$1.50.

Building a Railroad.

[Special correspondence MANUFACTURERS' RECORD.]

MARION, N. C., August 2, 1886.

McDowell county, of which Marion is the shire town, had, in 1880, a population of 9,836, mainly whites and natives of the

The new road that is coming here from the South is the Charleston, Cincinnati & Chicago railroad. As there has been much speculation regarding this road, and considerable difference of opinion as to whether the parties engaged in its construction were acting in good faith, I have been at some pains to ascertain all the facts for the MANUFACTURERS' RECORD. The history of this enterprise is unusually interesting. It began more than half a century ago in Charleston, South Carolina, some of whose merchants caused surveys to be made that led to the choice of the route over which this road is to be constructed. Many events occurred to interfere with the execution of the project, and finally the charter expired and the enterprise was abandoned. Later parties living in the five States to be traversed obtained charters for local roads that if built and united would have accomplished all the first projectors desired. There was, however, no concert of action or mutual understanding, for all that was desired or contemplated by these several parties was to secure railroad facilities for their own localities. Such was the condition of affairs until the early winter of 1882, when Mr. R. R. Johnson, of Boston, a railroad organizer and constructor of large experience, was invited by prominent Charleston merchants to investigate the subject and see if their long-cherished plan could not be revived and carried forward to completion. That gentleman became much interested in the subject and entered into an elaborate examination of its merits. Having satisfied himself that the plan was feasible, after going over the entire route with Col. P. P. Davidson, of No. 7 Nassau street, New York, he determined to secure the nine local charters that had been granted by the five States and to have them amended by the several legislatures sufficiently to enable him to unite them all under one organization when the proper time arrived. In this plan he was successful, after several years of diligent work. He then presented his plan in detail to a number of Massachusetts capitalists, who, after a careful investigation by

and Southern Construction Co., and having provided for all financial demands, present and prospective, they began their undertaking. It was thought wise, for many reasons, to keep the project of a great trunk line in abeyance at the outset, and to make contracts in the name of the local companies, with their own organization, for the building of the first links of the grand chain. As there was a railroad from Charleston to Sumpter, South Carolina, with which satisfactory terms could be made, there was no immediate necessity for commencing at tidewater. It would be economical to begin work at some point of intersection with a railroad, over which their rails could be brought. Having contracted with the rolling mills at Bethlehem, Pennsylvania, for the supply for their entire line, they decided upon Black's Station, on the Atlanta & Charlotte Air Line, as their starting point, and grading begun at once from that point to Rutherfordton, North Carolina. This was done in the name of the Rutherfordton Railway Construction Company, and it was this doubtless that led many to believe that the builders were simply speculators in the county and railroad bonds, and that when the road bed was ready for its rolling stock, it would be leased to some one of the old companies, and that there the matter would end. But this was a mistake. The Massachusetts Construction Company had quietly secured from the counties of North and South Carolina to be traversed by its line, bonds to the value of nearly a million dollars, and it had, before it begun grading, arranged for all the money it might need up to \$10,000,000, for the completion of the trunk road from the Ohio to the sea. The track men will begin laying rails the first of next month, and will have the road from Rutherfordton to Black's ready for business within a few weeks. The contract from the latter station to Sumpter has been given out, and grading between those points will begin immediately. The final survey between Rutherfordton and this place is nearly finished, and the contract for this



FIG. 4.



FIG. 5.



FIG. 6.

experts employed by themselves, agreed to join with Mr. Johnson in constructing a road from Charleston to Ashland, the latter a place on the south bank of the Ohio river, opposite Ironton at the mouth of the Scioto river.

These capitalists organized under the general law of their State as the Massachusetts

division will be made at once. The road from Marion to Charleston will open to business by July 1st, next year. A surveying corps is completing the location of the route from this place to Johnson City, Tennessee. Their report will be made early in August, and then that division will be put under contract, while both the sur-

State. This township had 2,312 citizens, or one-quarter of the whole, and the borough a population of 372. It now has somewhat more than 600 citizens and is a busy and thriving place. New dwellings are in course of erection and there is a business stir on the main street quite different from the summer quietness that prevails in most villages of its size in the South. A reason was given for this in a recent letter. It is the supply town for a large territory in this and other counties north, and the market for their produce. But there are other causes at work that will change this pretty village into a town of considerable size and importance, and that are already felt to some extent. By the first of July, 1887, Marion will be the temporary terminus of a trunk line, from Charleston, South Carolina, which will reach the Ohio river by or before July 1st, 1889. Always after that it will be the junction of this new road with the Western North Carolina, and consequently it must be a place of considerable importance. Nature has done everything for it as a site for a city. It is laid out on six ridges, three running north and south and the others east and west. Two-and-a-half miles distant is the swift Catawba, flowing through its broad and beautiful valley. This situation admits of perfect drainage at a minimum of cost to the municipality. It is also on the thermal belt, and, as at Tryon City, its peach crop never suffers from late spring frosts. The views from these several ridges are said to fully equal those of Asheville, but as most of them are covered with heavy forest growths, whose thick foliage at this season shuts out all but narrow vistas of landscape, it is impossible to say whether or not this claim is well founded.

veying parties, as soon as released from their present duties, will be put to work between the Tennessee line and Ashland. It is the intention of the management to push the entire work with all possible speed and to complete their undertaking by or before July 1st, 1889.

The high business and financial standing of the men engaged in this enterprise is a

great wealth and enterprise, and of the highest integrity.

The country this road when completed will open up to capital and enterprise is surpassed by no other in the land in the extent, variety and richness of its natural resources. Those south of Marion are well known to many readers, but from here north to the Ohio the road will pass through a section of

river it will cut through forests of hardwoods, the like of which are not to be found in the United States, save in these mountains and Piedmont sections. Besides all this, it will be the shortest route that can be built between Charleston and the Ohio, and nowhere will there be very heavy grades to interfere with the traffic, to which every mile of country on both sides will contribute. It is the certainty that within a year this great trunk line will reach this village that has awakened its people to new activity and caused the music of trowels, saws and hammers to fill the air "from sun to sun."

B. S. P.

Krom's Dry Kiln.

The cut shown herewith illustrates an improved dry kiln for drying ore after it is broken by an ore breaker—the invention of S. R. Krom, Engineer, 93 Washington street, New York. The cast-iron plates, *a*, on which the ore rests while drying, are arranged in steps, with spaces between each step of 3 or 4 inches. These spaces allow the heat from the fire underneath to pass up through the strata of coarsely crushed ore, as plainly indicated by the arrows.

The waste heat and evaporated moisture pass out through the chimney. The plates, *b*, or steps, are placed at an angle of 45°, but it will be observed that the furnace assumes an angle of 58°. Therefore to maintain the strata of ore of a uniform thickness it is necessary to have the check plates, *a*.

The distance between the lower edge of these plates, *a*, and the plates *b*, determines the thickness of ore strata. This thickness can range from 6 to 9 inches. The check plates, *a*, can be readily varied in height by means of holes in the flanges which support them.

This dry kiln is said to have advantages over the revolving drier. The kiln here illustrated requires no power to operate it, and the gentle flow of ore by gravity over the plates does not tend to stir up dust or create more from abrasion, and consequently no dust chamber is required.

The fuel required to dry ore in this kiln is the minimum amount. It is 20 feet long, 5 feet wide, and holds a strata of ore 6 to 8 inches thick. The capacity of this kiln may be estimated between 2½ to 5 tons per hour.

Variety Wood-Worker.

We illustrate on this page an improved variety wood-worker, which can be used for rip sawing, cross-cut sawing, jointing, hand

The different parts are not crowded together, but are so arranged as to be conveniently operated or changed, as desired, in the shortest possible time.

The false table, consisting of two parts, slides into the large table from each end, allowing any size heads being used; by reversing the sliding parts, any size saw up to 16 inches can be used on mandrel. The back slide can be quickly raised any height up to an inch above the level of the main table for jointing, etc.

The table is furnished with two fences, which can be instantly adjusted to different angles.

The mandrel, which is of steel, runs in long self-oiling bearings, and is raised and lowered on swinging frame by hand-wheel shown in front. The swinging frame is so arranged that it is impossible for it to jar or vibrate. The raising or lowering of the mandrel does not affect the tension of the belt in the least.

The boring attachment is raised and lowered by screw and wrench-handle, and has a sliding table with adjustable fence.

An attachment for tenoning, with sliding table, can be furnished with this machine when specially ordered.

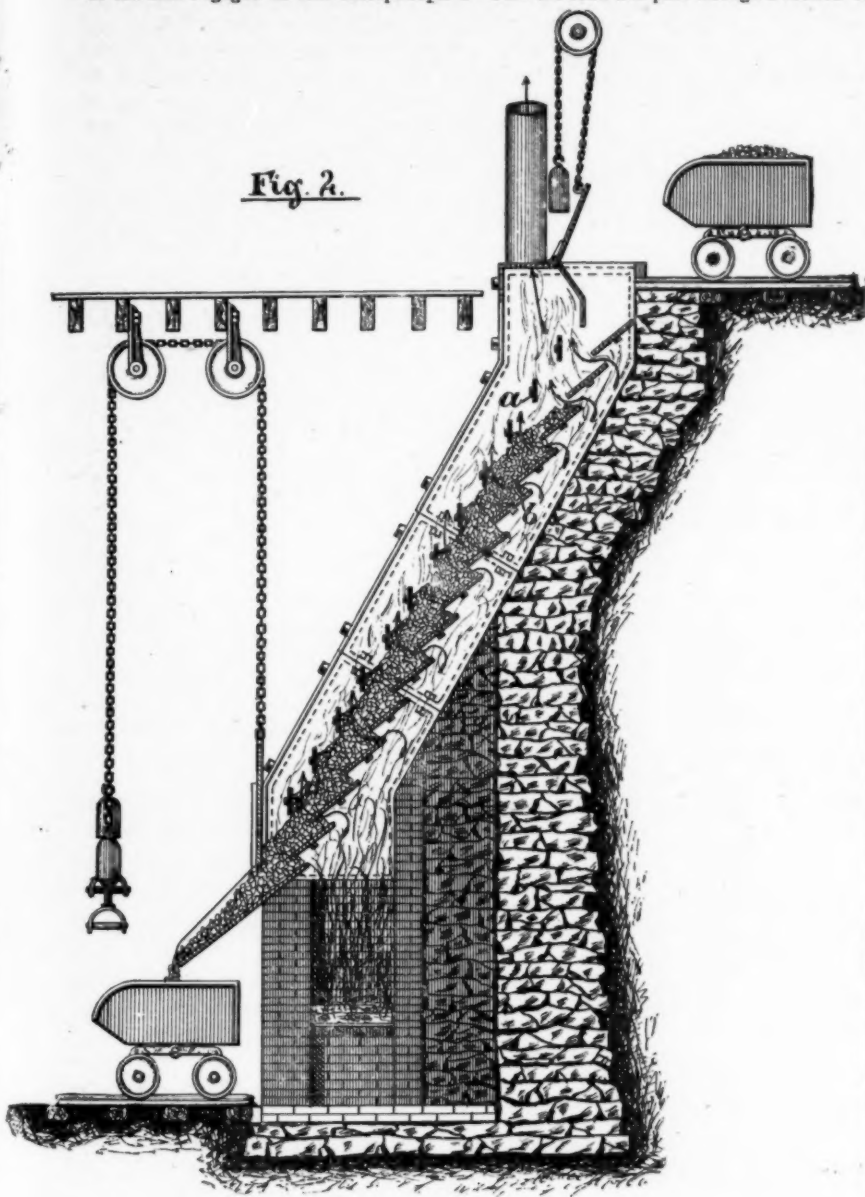
The machine is also made without jointing or boring attachments, or with one and without the other.

Cordeman, Meyer & Co., 171 and 173 W. Second street, Cincinnati, Ohio, are the manufacturers.

WHEN the Texas people get ready to build a town they do it in a hurry. Ballinger, a new town in Runnels county, is less than one month old, but it has 2,000 inhabitants and is still growing.

The Steel Rail Trade.

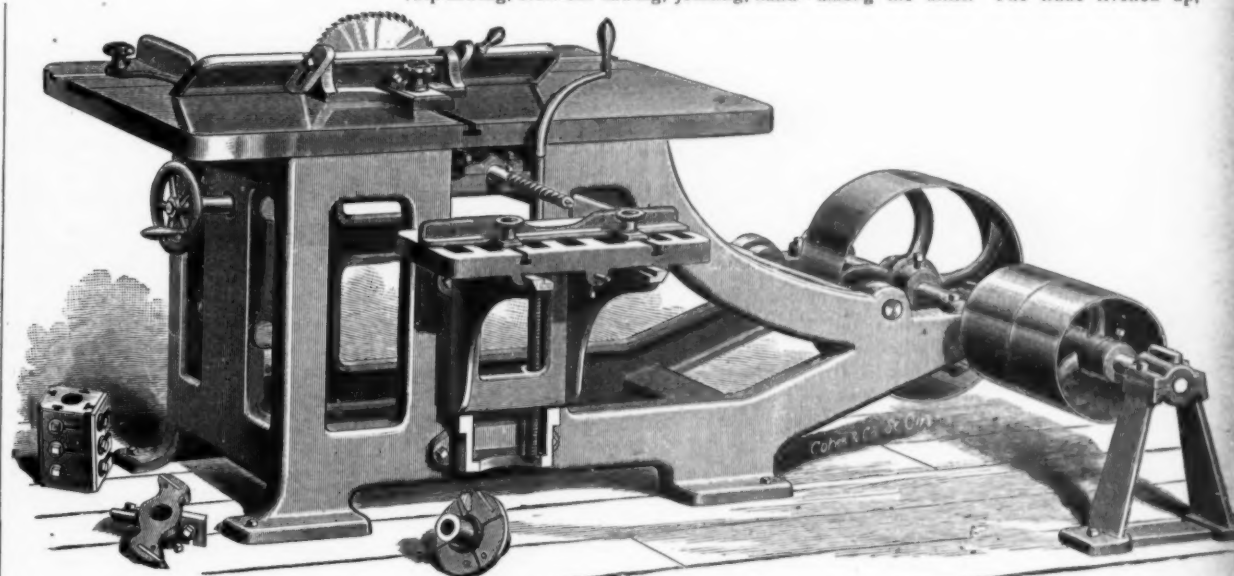
The steel rail mills of this country are running full on orders booked up to late in the fall. The situation in this branch, as compared to the conditions one year ago, and the existing condition in Great Britain and Europe, is singular. One year ago the situation in this country was well nigh desperate. Rails were sold at a figure that barely covered cost of production, as low as \$25 per ton. The producers entered into a compact to control and minimize production down to the lowest limit of legitimate demand. The amount to be produced was fixed at 750,000 tons, and apportioned among the mills. The trade livened up,



KROM'S DRY KILN.

guarantee alike of their ability and good faith. The president of the Massachusetts Construction Company is A. B. Harris, of Springfield, Mass., who is also president of the Vermont Valley Railroad, the Sullivan Railroad, the Ashuelot Railroad, and the St. Johnsbury & Lake Champlain Railroad; the vice-president is Charles Whittier, president of the Whittier Machine Co.; the chief engineer and superintendent of the construction is Jno. F. Jones, of Hartford, Conn., late vice-president and general manager of the Hartford & Connecticut Western Railroad, and the general manager is Mr. R. A. Johnson, of Boston. Among the directors of the company are James Kirkham, president First National Bank of Springfield, Mass.; Eben W. Bond, president Massachusetts Mutual Life Insurance Co.; E. Howard, of Boston, founder of the Howard Match Co., and Edwin Lawson, of Lowell, president of the Coburn Shuttle and the Lawson Knitting Company.

The work of the construction company has reached the point where it has become advisable to consolidate all the nine local railroad companies into one, and arrangements are nearly completed to that end. The presidency of the Charleston, Cincinnati & Chicago Company will be tendered to Colonel Frank Coxe, of this State, and from the great interest he has in the enterprise it is expected that he will not decline the honor. Colonel Coxe is widely known in financial and business circles as a man of



VARIETY WOOD-WORKER.

which comparatively little has been written, and much of which is a primitive wilderness. In Mitchell county it will intersect immense mineral lodes of magnetic ore similar to that which has made the Cranberry Mine famous. In Virginia and Kentucky it will open up some of the most extensive coal beds on this continent. In all the country from Shelby, North Carolina, to the Ohio

planing, boring, routing, mitring, beveling, paneling, grooving, moulding, etc. The frame and table are both of iron and very heavy, the countershaft resting on extensions of the frame, with an outside bearing, which insures perfect firmness. The frame is long, making the belt from countershaft to mandrel so long that all danger of the belt slipping is avoided.

and prices advanced to \$30, then to \$35, and the limit was raised to 1,400,000 tons, and now the demand seems to be in excess of the supply at \$36@36.50.

As stated in this paper some days ago, the European steel rail makers are making a desperate effort to market their product in this country, and thus disrupt the prosperity of the steel rail manufacturers here. Whether they succeed or not will not be determined until fall.—Pittsburgh Dispatch.

History of a Thriving Town.

Tobacco Culture—Manufacturing Interests, Etc.

[Special correspondence MANUFACTURERS' RECORD.]

HICKORY, CATAWBA CO., N. C.,
July 31, 1886.

Long before the days of railroads, there was in the midst of the hickory groves that covered this considerable piece of table land, a large log house, with many rude out-buildings. This was the home of a sturdy Dutch settler, and was known to the teamsters and settlers far and near as Hickory Tavern. At all seasons when the roads were passable, this tavern was nightly surrounded by wagons and teams, and by the bivouac fires of their owners, and of drovers and horse traders from Tennessee and Virginia. The valley of the Catawba was then the great highway of commerce between the mountains and the cities of Columbia and Charleston. When travel was at its height, it was not unusual for a hundred or more men to be in camp here of a night. It was a famous place in those days, and until in 1860, when the railroad reached it. Then it enjoyed a temporary boom as a terminus. An old citizen named Hale, now some 85 years old, established the first store here, and kept it many years. The Confederates put up warehouses, in which were stored the tithes of cotton and provisions collected in all the surrounding country. A raiding force from Sherman's army burned these in 1865. Settlers began to arrive after the war. Two or three stores were opened, and finally, in 1872, an incorporation was secured under the old name—Hickory Tavern. In 1879 a new charter was obtained, in which the word Tavern was dropped as superfluous. By this act of incorporation, the town is a circle of two miles diameter, the railroad depot being its centre, with an elevation of 1,200 feet above the sea. There is a gentle slope from the depot in all directions. Hickory is now a town of 2,800 inhabitants. It has broad streets well cared for, with gasoline for their illumination, two tobacco warehouses, quite a number of stores which carry large stocks, several saw and shingle mills, a wagon, and a sash, blind and door factory, a steam tannery, and several manufactories of plug and smoking tobacco. There is a fine brick seminary for young ladies, and a classical school for boys, besides the usual common schools.

The trade of the place until some years after its original incorporation was mainly from the mountains west and north. The local business was too small to maintain a first-class store. But since the fertile lands in Catawba county have been cut up into farms and put under cultivation, there has been a marked change. The factories have brought skilled work people here, whose annual expenditures are of much value to the retail trade. Germans were the earliest settlers of Catawba county, Scotch-Irish followed, and within a decade many have come from various parts of the country, who have heard of these rich alluvial lands, and of the delightfully healthful and uniform climate. Physicians at Asheville and elsewhere in the mountains often send their patients here for relief from bronchial complaints, the superior dryness of the atmosphere counting much in favor of this Piedmont section. The population of the county in 1880 was 14,905, an increase of more than 35 per cent. in 10 years.

The prosperity of this place is a striking illustration of what one live man can do. Coming here a stranger, I went to the editors of the Carolinian and the Piedmont Press, (two very good weekly journals,) and asked for information about the town. Each advised me to find "Gaither Hall." "He knows it all," said one. "He's the life of Hickory," said the other. This gentleman, when found, proved to be Mayor J. G. Hall, president of the Piedmont Wagon Co., partner in Hall Bros.' mercantile establishment, senior member of the tobacco firm of Hall

& Bohannon, and stockholder or silent partner in other business concerns. Mayor Hall is a remarkable man. He was born in Iredell county, February, 1845. Went into the Confederate army in March, 1862, when only 17, and remained in the service until General Lee's surrender. Immediately after that event, he, like most men of like situation, turned from his sword to the ploughshare and assisted a brother in Wilkes county in making a corn crop. In 1866 he entered a store as a salesman, and later he went to Salem and was employed for several years as salesman, bookkeeper, and finally traveler for the Fries Woolen Mills. In 1871 he joined his brother in a store at Wilkesboro, but the next year came here and opened on his own account. In 1875 his brother joined him, and the firm of Hall Brothers has ever since been active and prosperous. In 1875 Mr. Hall was chosen mayor of the town, an honor again conferred in 1884, and renewed both last and this year. But many irons as this gentleman has in the fire, he lets none of them burn, but so apportions his time that while always busy, he is never hurried, but always cool and collected.

Hickory is a considerable producer of sawed lumber, and ships great quantities of building stuff to various places West. In 1873 a small rickety shingle mill was started here, whose first year's product (3,000 shingles) was considered a great achievement. Now many millions are made and sold annually, and while the percentage of profits has gone down to the minimum, yet the business is paying more than fairly well.

One industry that has contributed largely to the prosperity of this place is the cultivation, marketing and manufacturing of tobacco. This Piedmont section has proved itself fully equal in all respects to the counties of the "golden belt" for the growth of that bright leaf tobacco which no other State has as yet produced. The history of this industry is one of the most interesting in the agricultural and business annals of this country, but would occupy too much space if reproduced in its entirety. It is enough to say that it was not until after the late war ended that the people west of the Richmond & Danville Railroad ever thought of attempting the cultivation of this peculiar species of the weed. In his report for the Census Bureau, Col. J. B. Killebrew, of Tennessee, a scientific observer and a man of excellent practical judgment, to whom was intrusted the investigation of this subject, after a most careful study of the lands, the climate and the process of curing, gave such information as encouraged the farmers west of that road to begin the cultivation of this peculiar weed, the demand for which had increased immensely. And here comes in one of the most curious things in connection with the civil war. The Union soldiers who served in the sea-coast States acquired a taste for this tobacco, both for chewing and smoking. They found that while it had all the stimulating qualities they desired, it contained much less nitrogen and nicotine than all they had been wont to use, and that it was therefore free from the noxious effects of other varieties. This unexpected and increasing demand raised prices to a degree never before known. The golden leaf brought golden returns to its cultivators. Colonel Killebrew's revelation was eagerly received by many Piedmont and mountain farmers, who began its cultivation experimentally, and realized such grand returns that they speedily increased their areas devoted to this crop, an example rapidly followed by their neighbors. Now there are tobacco farms, curing houses, warehouses for auction sales of the crops, and factories for putting the leaf into marketable shape, all the way from Raleigh, in Wake county, to Cherokee, the westernmost of the trans-montane counties. One of the first places to enter largely into this new field of enterprise was Hickory, and at the head of the movement was the firm of Hall Bros., which, early in the present decade, published for gratuitous dis-

tribution a manual of tobacco culture, prepared with especial reference to its growth in the Piedmont region, by Hon. R. B. Davis, a successful cultivator, and a member of the General Assembly from Catawba county for 1879-80. This publication gave a great impetus to the business all through this section of the State. They at the same time engaged in the manufacture of chewing tobacco, first in a small way, but which has grown to the large scale on which it is now conducted under the firm name of Hall & Bohannon. This concern, which uses mostly fine tobacco for the best qualities of plug and twist, has taught the farmers for miles around that the best tobacco commands the highest market prices; that a clean, bright, oily, waxy leaf properly cured is worth several hundred per cent. more than one produced by slovenly cultivation and curing. In doing this they have been public benefactors, for wherever careful agriculture is observed in respect to any one crop, it invariably inculcates the wisdom of applying the same lesson to all. It is not to be wondered at therefore that those who raise the best tobacco have also the best grain, grass and root crops.

In company with Mr. J. M. Totlen, an intelligent and thoroughly practical man, who has since 1880 been superintendent of this establishment, your correspondent went through it from top to bottom, and was greatly interested in all he saw. The business began in 1878, in a small way, but was not moved until 1881 into its present quarters, when Mr. Totlen had been in charge for a year. This is a four-story brick factory, 55 feet wide by 135 feet long, and with a large area around it for sheds, stables and drying ground. This factory is run from April to November, inclusive. In the intermediate season the superintendent attends the auction sales as a buyer on commission at the warehouses here for sundry large firms farther North. From 80 to 100 persons are employed in this establishment. From 250,000 to 300,000 pounds of leaf tobacco are used every season, and the present has been the only one in which the firm was able to get its full supply at the local warehouses. Six different grades of the leaf are used for both fillers and wrappers, and fourteen styles of plug and twist are put on the market. This firm pays a revenue tax of from \$16,000 to \$20,000 annually. From the foregoing some idea may be obtained of the growth of this industry in Hickory, but while it is the leading firm, it is not the only one engaged in tobacco manufacturing.

Next in importance to the tobacco industry, at present, but bound to supersede it in time, so far as this borough is concerned, are the Piedmont Wagon Company and the Hickory Manufacturing Company, both of which were started because of the plenitude of suitable woods in the forests surrounding the place. Both have already grown into considerable establishments, and each will increase in importance as time goes on. But the first has passed through experiences which every similar enterprise at the South must surmount before they can succeed, and therefore, as a cautious suggestion to those who may think of starting business anywhere in Dixie, a brief narration of this may be of value.

No person or company can begin to manufacture to advantage in a community where there are no workmen skilled in the business and accustomed to work on the assembly plan. There was a notable instance of this in Columbia, South Carolina, during the war, at the Confederate armory, established by Major C. C. McPhail, late the efficient chief of the bureau of mines and manufactures of the Richmond & Danville Railroad, and more recently engaged in the development of Southern enterprises, on his own account, with headquarters at Richmond. When the Major started the manufacture of small arms in that city, under orders from the War Department, he had detailed from the ranks as workmen a large number of gunsmiths,

but when they went to work he found that every man of them had ideas of his own, as to how the work should be done, and none were willing to give up their individual notions and obey his orders. After trying them until satisfied of the impracticability of getting good service out of them, he sent them all back to their regiments, and instead, had detailed all the operative dentists in the ranks. He had then a class of men skilled in the use of fine tools, who knew nothing about making guns, but who put their skill in subjection to his orders, and the result was as fine stands of arms as were turned out at the U. S. armory, at Springfield, Mass., or at any of the private gun factories of the North. What was the fact then holds good now. If men start a new manufacturing enterprise South, they must have good foremen in the different departments, who can teach green, but willing hands, how to do every kind of work connected with their enterprises. Until this is done, there can be no such uniformity in production as is absolutely essential to success. The Piedmont Wagon Company has passed through this experience, and is now furnishing elegant, substantial and uniform work. Its product this year will be 2,400 vehicles, and next season at least 3,000. I have no space to speak of the doors, sashes, blinds and mantels turned out by the Hickory Manufacturing Company. It is doing a splendid business, with a capital Philadelphia mechanic at the head of its manufacturing department, and is realizing in these alleged hard times a prosperity of which few Northern concerns engaged in like business can boast.

B. S. P.

THE rumors that the Richmond & Danville Railroad Co. would make Newport News the tidewater terminus of their line are again revived. It is claimed that Mr. Huntington has made a liberal proposition to this company to induce them to select Newport News, and that it has been accepted. Should it prove true it would have a very important bearing upon the development of this promising Virginia port.

THERE is a fine opening at Jackson, Tenn., for any one who will build and conduct a good hotel. An exceedingly desirable site can be secured, near post-office and courthouse. Jackson is a town of 8,000 inhabitants, is the county-seat of Madison county, has railroads, large manufacturing interests, &c. Parties desiring particulars can communicate with Jas. Bright, Jackson, Tenn.

THERE are a good many rumors floating around to the effect that extensive steel works, to cost not less than \$2,500,000, will be built in Baltimore in the near future. While some important negotiations have been made with that object in view, it is hard to say whether this enterprise will be established or not. By some it is claimed as definitely decided upon, but no particulars are at present obtainable.

THE younger portion of the present generation owe a debt of gratitude to Messrs. D. Lothrop & Co., who so assiduously look after their literary needs. In addition to that splendid magazine for young folks—Wide Awake—they publish also The Pansy, an illustrated magazine for the little ones. The Pansy should be in every household where there are children; it would prove an invaluable aid in their training, mentally and morally. It is published at \$1 a year.

BRASS.

ROLL AND SHEET BRASS.

Brown & Sharpe's Gauge the Standard.

New List, Jan. 17, 1884.
Dis 30@30 5 5

COMMON HIGH BRASS.

Wider than	10	12	14	16	18
and including:	10	12	14	16	18
To No. 20, inclusive.	.21	.22	.23	.24	.25
Nos. 21, 22, 23 and 24.	.25	.26	.27	.28	.29
Nos. 25 and 26.	.29	.30	.31	.32	.33
Nos. 27 and 28.	.33	.34	.35	.36	.37
Add 9 cts. 1/2 lb. for sheets cut to particular widths and lengths.					
Add 1/2 c. 1/2 lb. additional on each number thinner than Nos. 28 to 38 inclusive.					
Brass thinner than No. 38 is Platers' Brass.					
at.....					
Printers' rules.....					
Printers' Sheets and Plates cut to particular sizes and lengths to No. 20, inclusive.....					
Brass, Spinning and Spring Brass, one cent more than common High Brass.					
Low Brass four cts. 1/2 lb. more than common High Brass.					
Gilding, Oreide and Bronze seven cts. 1/2 lb. more than common High Brass.					

SLITTING METAL.

Add to list as follows:

Over 1/2 in to 1 in, inclusive, Nos. 12 to 20, inclusive.	1/2 c.
Over 1/2 in to 1/2 in, inclusive, Nos. 12 to 20, inclusive.	1/2 c.
1/2 in and narrower, not less than.....	1/2 c.
Over 1/2 in to 1 in, inclusive, Nos. 21 to 28 inclusive.	1/2 c.
Over 1/2 in to 1/2 in, inclusive, Nos. 21 to 28, inclusive.	1/2 c.
1/2 in and narrower, Nos. 21 to 28, inclusive, not less than.....	1/2 c.
Over 1/2 in to 1 in, inclusive, Nos. 29 to 32, inclusive.	1/2 c.
Over 1/2 in to 1/2 in, inclusive, Nos. 29 to 32, inclusive.	1/2 c.
1/2 in and narrower, Nos. 29 to 32, inclusive, not less than.....	1/2 c.
Over 1/2 in to 1 in, inclusive, No. 33 and thinner.....	1/2 c.
Over 1/2 in to 1/2 in, inclusive, No. 33 and thinner.....	1/2 c.
1/2 in and narrower, No. 33 and thinner, not less than.....	1/2 c.
Slit Metal cut to particular lengths, 1/2 lb. additional.....	1/2 c.

PLATERS' OR GOLD METAL.

In bars.....	40c.
In ingots.....	43c.
In ingots, planed or polished.....	46c.

BRASS TUBING.

Brown & Sharpe's Gauge the Standard for all Tubing.	Per lb.
Plain, to No. 20, inclusive.....	35
Above 5-16 inch to 3 inches, inclusive.....	35
Plain, to No. 21, above 3 inches.....	45
" 5-16 inch to No. 20.....	45
" 1/2 inch.....	60
" 3-16 inch.....	1.00
" 1/2 inch.....	1.50
Bronze Tubing 3 cents per pound more than Brass.	
Nos. 21, 22, 23, two cents advance on list for each number.	
Nos. 24, 25, 26, four cents advance on list for each number.	
Above No. 26, special rates.	
All Mandrel-drawn Tubes, 1/2 inch and above, five cents advance on list prices.	
All Mandrel-drawn Tubes under 1/2 inch, twenty-five cents per pound advance on list prices.	
Fancy Tubing to No. 20.....	40-43
English, Scotch and Extra Pattern Fancy Tubing to No. 20.....	48
Tubing sawed or cut, 2 to 4 feet long, one cent advance on list.	
Add to one cent one-half cent for each additional cutting under two feet.	

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REFERENCES—HON. WM. R. COX, Washington, D. C.; HON. WALDO HUTCHINS, New York City; WM. HAMERSLEY, Esq., Hartford, Conn.

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Narrow Gauge Locomotives.

Passenger and Logging Cars.

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Spikes at Low Prices.

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WATER and GAS PIPE.

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In corresponding with any of these advertisers please mention the Baltimore Manufacturers' Record.

Parties advertising in this column must have replies sent to their own address, and not to care of Manufacturers' Record, unless stamps are sent for forwarding replies. Advertisements sent not in accordance with this requirement will not be inserted.

JUNCTION CITY, KY., located at the crossing of the Cincinnati, Southern and Louisville & Nashville Railroads, offers the finest advantages to manufacturers. Those desiring to see the place are invited to attend our sale of lots, September 9. Correspondence solicited. W. T. Ewing, Chattanooga, Tenn.

WANTED.—Purchasers for 25 building lots (50x150) in the beautiful and growing town of Luray, immediately on the line of the S. V. R. R., 123 miles south of Baltimore. Address E. A. Wilson, Luray, Va.

IRON MINE and water power for sale. Situated in the finest section of North Carolina in Surry county, on the C. F. & Y. V. Railroad. For information address, H. C. Brown, Mt. Airy, care of J. T. Patrick, Raleigh, N. C.

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WANTED.—Practical man for spoke and handle factory; also location for same in Virginia, North or South Carolina or Georgia. Address, E. Maxwell, Carter's Mills, N. C.

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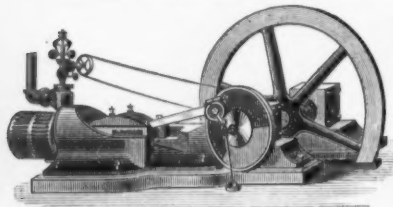
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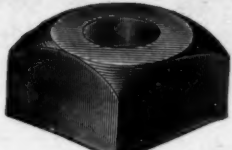
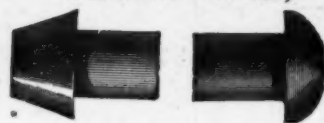
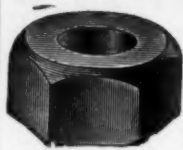
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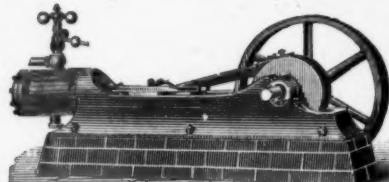
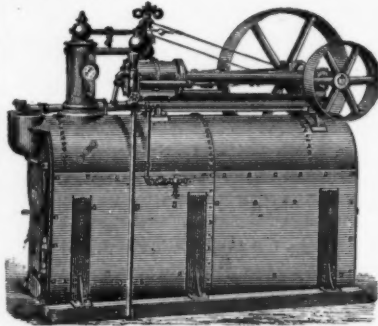
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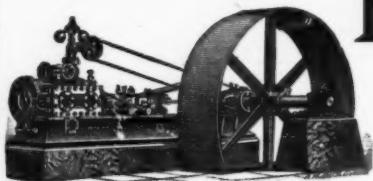
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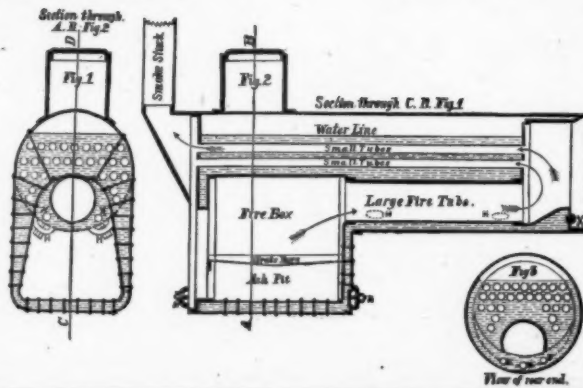
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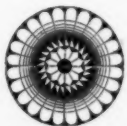
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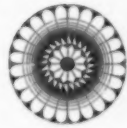
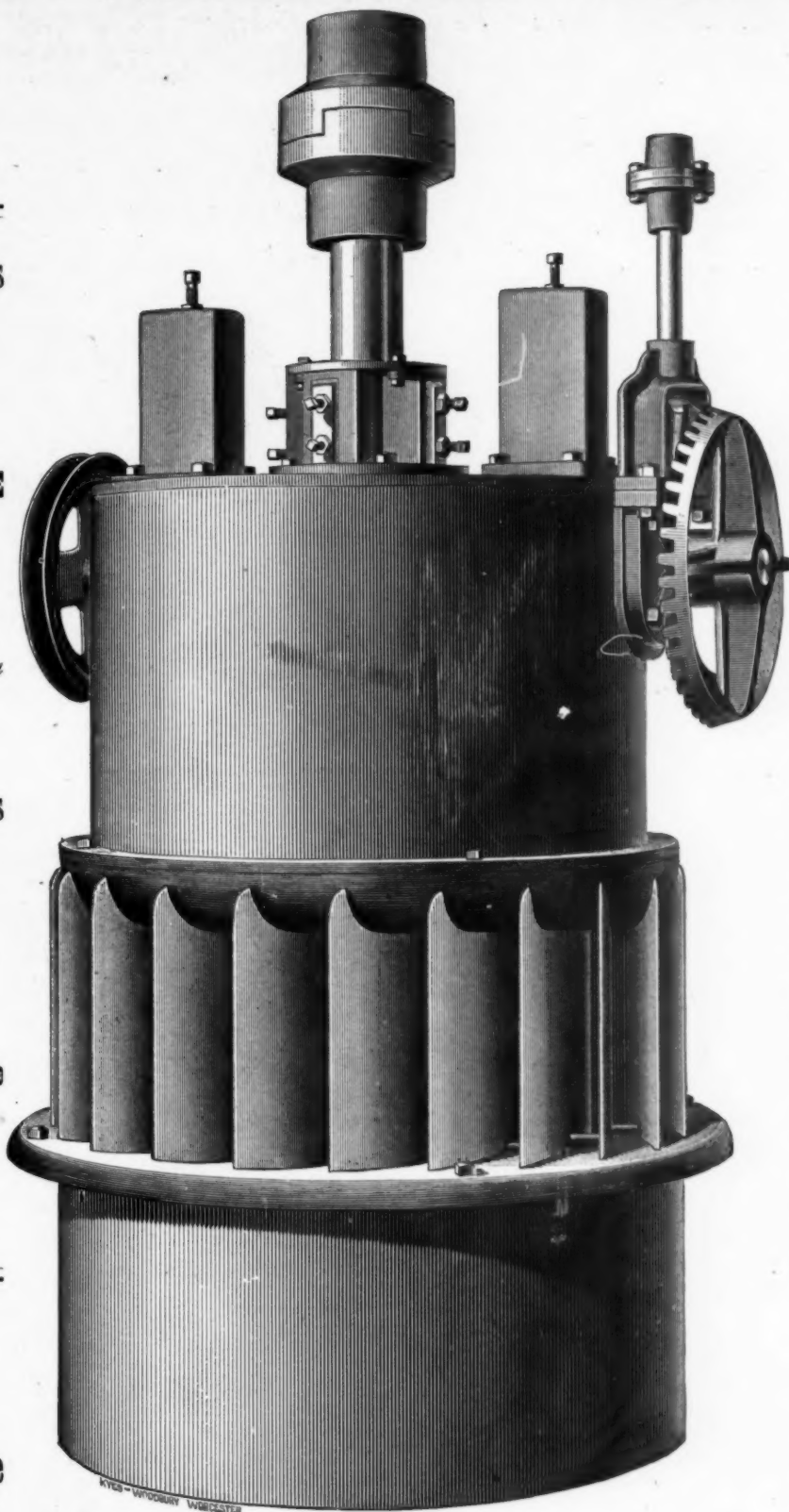
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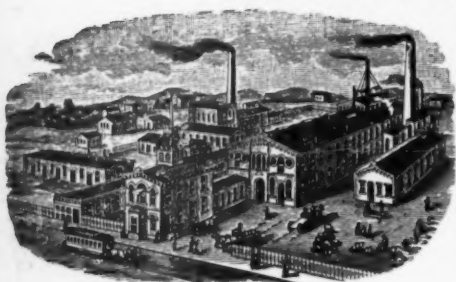
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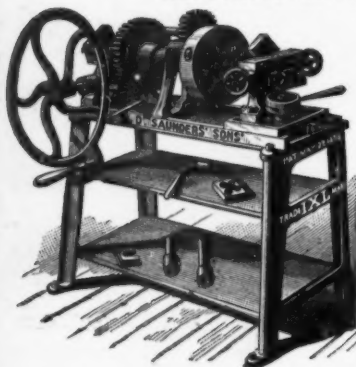
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TABOR STEAM ENGINE GOVERNOR

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WILL REGULATE AS CLOSELY AS THE BEST AUTOMATIC CUT-OFF ENGINE.

Perfectly adapted to every type of Stationary and Portable Engine. Fitted with speed adjuster, Sawyer's Lever and Automatic Safety Stop.

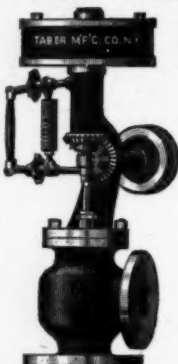
SIMPLE, SENSITIVE AND DURABLE.

All Parts Interchangeable.

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"STEAM"

A valuable book for every Steam user and Engineer,

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Manufacturers of

WATER-TUBE BOILERS,

107 Hope St., GLASGOW.

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BACON

Winding Engines, Furnace Hoists, Mine Hoists.

(With or without Boilers.)

"Mining Plants," Concentrating Works, and Dredging Machinery Furnished Complete.

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References: { Croten Magnetic Iron Mines, Brewster's, N. Y. Crown Point Iron Co., Crown Point, N. Y. Belvidere Iron Co., 52 Broadway, N. Y. Sea Island Chemical Co., Beaufort, S. C.



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TIRES and AXLES

OF EVERY DESCRIPTION.

TOOL- AND MACHINERY STEEL



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Works & Main Office:

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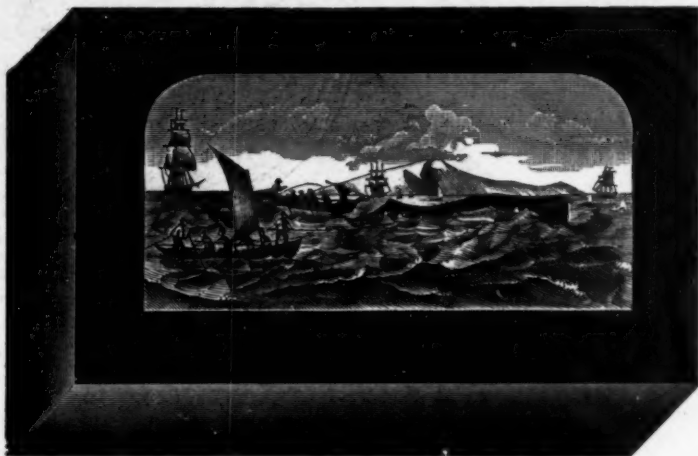
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Our facilities for the production of

**ARTISTIC
Color Work**

AND ALL STYLES OF
Fine Commercial Engraving
Are Unsurpassed.

All work executed under careful
and personal supervision at prices
consistent with first-class pro-
ductions. Sole proprietors of the

**CELEBRATED
LITHOCAUSTIC PROCESS**
Branch Establishment:
Hoen Building, RICHMOND, VA.



ESTABLISHED 1835.

Roller Detachable Chain Belting

—FOR—

Elevators, Conveyors,
Carriers, and for
Driving Purposes.

Especially adapted for the economical handling of

**CLAY, COAL, ORES, BROKEN STONE, ICE,
STRAW, DRY and SPENT TAN, SAWDUST,
LUMBER, GRAIN, SEEDS, Etc.**

Manufactured and Sold by

Roller Chain Belting Co.
COLUMBUS, OHIO.

Also Manufacturers of the Legg Coal Mining Machines and
Rotary Power Coal Drills. Send for Illustrated Cata-
logue and Price-List.



ATLANTA RUBBER COMPANY,

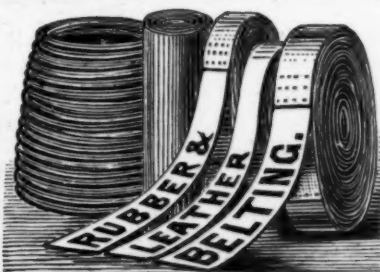
ATLANTA, GA.,

**RUBBER BELTING,
PACKING, HOSE, &c.**

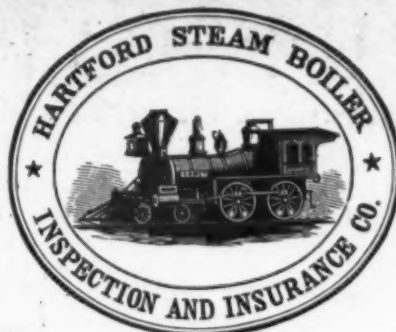
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MILL SUPPLIES AND
ALL KINDS OF RUBBER GOODS.**

AGENTS:

NEW YORK RUBBER CO'S BELTING, &c.
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POLICIES OF INSURANCE
AFTER



A CAREFUL INSPECTION
OF THE

BOILERS,

Covering all
Loss or
Damage to

Boilers, Buildings & Machinery

ARISING FROM STEAM BOILER EXPLOSIONS.

The Business of the Company Includes All Kinds of Steam Boilers.

Full information concerning the plan of the Company's operations can be obtained at the
COMPANY'S OFFICE, Hartford, Conn., or at any agency.

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WALKER MANFG. CO.



Shafting,
Hangers,
Pulleys.

Pulley Castings and
Machine-Molded

GEARING

A SPECIALTY.

Cleveland, - Ohio.

Estimates furnished. Write
for Gear and Price-Lists A.



THE SCIENTIFIC PORTABLE FORGE



AND
BLACKSMITH HAND BLOWERS.

GUARANTEED

**The Lightest Running! The Strongest Blast!
The Most Durable!**

**ADAPTED TO ALL KINDS OF WORK,
Send for Catalogue! AND MADE IN STYLES AND SIZES TO SUIT.**

THE FOOS MANUFACTURING CO., - Springfield, Ohio.

The Little Giant Excavator.

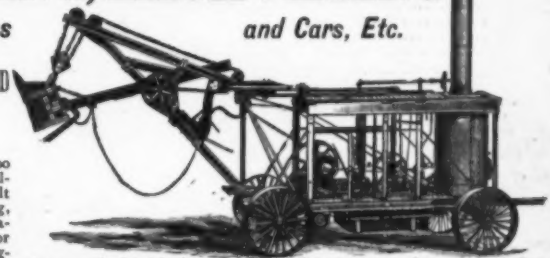
—A LONG FELT WANT SUPPLIED.—

For DITCHING, EXCAVATING

Loading Wagons

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**50 TO 100 PER CENT. SAVED
IN LABOR.**



Capacity of Machine 500 to 700
cubic yards per day. Self propel-
ling. Easily moved. Being built
entirely of steel, is both strong,
light and a very substantial ma-
chine. Can be used on flat-boat for
dredging ditches, irrigating or dig-
ging canals. Contractors and railroads promptly furnished with estimates for excavators of every description

Address VULCAN IRON WORKS, Toledo, Ohio.

STEEL CASTINGS

FROM 1-4 to 15,000 lbs. WEIGHT.

True to pattern, sound, solid, free from blow-holes, and
of unequalled strength.

Stronger and more durable than iron forgings in any
position or for any service whatever.

40,000 CRANK SHAFTS and 30,000 GEAR WHEELS of
this steel now running prove this.

CRANK SHAFTS and GEARING specialties.

STEEL CASTINGS of every description.

Send for Circulars and Prices to

—CHESTER STEEL CASTINGS CO.—

Office, 407 Library Street, Philadelphia.

Works, Chester, Pa.

TRADE NOTES.

MESSRS. LOCKWOOD, GREENE & Co., Mill Engineers, Providence, R. I., have been engaged by the Warren Manufacturing Co., Warren, R. I., to make plans for a complete revision of their present steam plant, and also for whatever changes it may be found desirable to make in the way of improvements and additions to their present buildings, and for the better disposition of machinery and distribution of power throughout the plant.

The following letter explains itself:

ABERDULAI TIE PLATE WORKS,
NEATH, WALES, Nov. 2, 1895.
MESSRS. MERCHANT & Co., Philadelphia:

Dear Sirs—We are in receipt of your letter of October 22, in which you state that a competitor has sold a customer a roofing plate, representing to him that the same was made at our works, and that it was identically the same as the "Camaret" Roofing, the only difference being in the branding of the boxes.

We know that it is unnecessary for us to inform you how untrue all such statements are, but we desire the consumers in the States to know that no credit should be given to such statements, as we make only the "Camaret" Roofing Plate for your house, you having our entire make of this plate, as well as the control of same in America.

Further, we will state that we have not made nor sold a box of "Camaret" Roofing Plate to any house in England or America except to yourselves since we gave you over a year ago control of same; and under no circumstances would we manufacture this plate for anyone under any other brand.

We trust this letter will have the desired effect of putting an effectual stop to all such misrepresentations in reference to our brand.

Yours truly,

(Signed.) JOS. WILLIAMS & Co., Ltd.
Per J. H. R. RITSON, Gen'l Man.

THE Roller Chain Belting Co., of Columbus, O., in order to keep up with the demand made for their improved elevating and conveying machinery, have added to their present works an additional building, together with new machinery. With these increased facilities, they hope to keep up with the rapidly increasing trade.

MESSRS. LOCKWOOD, GREENE & Co., Mill Engineers, Providence, R. I., have made plans for a dye house for Mr. Alex. Gibson, Marysville, N. B., to be run in connection with the mill built by him about two years ago.

MESSRS. MERCHANT & Co., Philadelphia, call attention to a new article called "anti-oxyd," which is used to protect machinery against rust. It met with great success in the machinery department of the recent Antwerp exhibition. In order that the machines might retain the perfect finish and bright appearance, which they possess when leaving the shops, they were covered with the anti-oxyd, and, it is said, that during the whole period of the exhibition it was not necessary to clean them again.

It is claimed that all articles manufactured of metals—no matter whether of iron, copper, brass, lead, zinc or any other—when covered in accordance with the printed directions, will retain their original polish, and cannot rust. It is said to protect machinery from against dampness of the earth as well as against fog, dust, steam, etc. Messrs. Merchant & Co. are sole agents for the United States and Canada, and will send descriptive circulars on application.

We call attention to the advertisement of the Globe Oil Co., Cleveland, O., who want to arrange with some reliable house in every town of importance in the South to handle their goods. They prefer houses that sell agricultural implements, machinery, &c. Their oils have a wide reputation, and where once introduced find a ready sale.

MESSRS. LOCKWOOD, GREENE & Co., Providence, R. I., have been engaged by Messrs. Michael Nairn & Co., of Scotland, to make plans for their new plant, to be located in Newark, N. J., which is to be erected this season. The work will be started as soon as possible. They have also made plans for some slight changes in the mill, at Newton, Upper Falls, Mass., for Mr. Walter T. Phipps.

WE call attention to the advertisement in another column of A. J. Lyman, real estate and loan broker, Asheville, N. C. Asheville is one of the most attractive as well as one of the most enterprising and progressive towns in the New South. Parties desiring to investigate with a view to purchasing land there, or to investing money on loans, are advised to correspond with Mr. Lyman, who will attend faithfully and punctually to any business placed in his hands.

Mr. Lyman is a graduate of Trinity College, Hartford. He also spent a year at Columbia College Law School, New York, and two years in the office of Mr. Wm. Hamersley, State's attorney, Hartford, Conn. He is a member of the bar of Connecticut, and of the North Carolina bar, also.

List of Patents.

The following Patents were granted to citizens of the Southern States, bearing date July 27, 1895. Reported expressly for this paper by Louis Bagger & Co., Mechanical Experts and Solicitors of Patents, Washington, D. C.

Adams, W. T., Baltimore, Md.	Ash-sifter	346,340
Banks, C. W., Baltimore, Md.	Portable Wardrobe	346,346
Benson, B. S., Baltimore, Md.	Surface-condenser	346,348
Bland, John, Thomaston, Ga.	Bridle	346,352
Brown, Samuel, Russellville, Ark.	Refrigerator Store-house for fruits and vegetables	346,189
Bujac, James, Catonsville, Md.	Grate, for burning coal-dust	346,086
Carran, R. B., Ludlow, Ky.	Hinge	346,264
Charlton, James, and H. C. Lynch, Houston, Tex.	Funnel attachment	346,265
Clifton, J. M., Aunt, Tenn.	Mail-carrier	346,357
Curd, W. H., Lick Run, Va.	Wheel	346,401
Dickson, J. A., Pulaski, Tenn.	Automatic Wagon-brake	346,196
Dunham, Bradford, Baltimore, Md.	Locomotive-brake	346,271
Genese, David, Baltimore, Md.	Respirator	346,367
Guinn, J. C., Knoxville, Tenn.	Bedstead-clamp	346,153
Hibarger, Emanuel, Hagerstown, Md.	Watch-makers' Oil-cabinet	346,201
Hynds, F. P., Ralston's Station, Tenn.	Car-coupling	346,409
Jenkins, S. T., and T. J. McGuire, Baltimore, Md.	Packing-box for transporting ripe fruit	346,162
Jowell, G. R., Thorp's Spring, Tex.	Anti-friction Wagon-slide	346,373
Le Grande, W. W., Louisville, Ky.	Galvanic Battery	346,207
Lewy, Henry, Montgomery, Ala.	Door-spring	346,296
Mangold, Leonard, and C. Grimm, Chattanooga, Tenn.	Harrow	346,117
Marks, T. K., Cornersville, Tenn.	Truss-bridge	346,118
McKenna, E. W., Louisville, Ky.	Cleaning and Lubricating Railway-tracks	346,303
Pyle, Emma A., New Orleans, La.	Corset-fastening	346,442
Pitch, J. P., Charlotte, N. C.	Cultivator	346,223
Schultz, F. W., Baltimore, Md.	Soldering-iron	346,319
Shriver, Robert, Cumberland, Md.	Adjustable Indicator for calendars	346,132
Talbot, T. W., and J. L. Farmer, Florence, S. C.	Car-coupling	346,329
Teague, B. H., Aiken, S. C.	Dental Disk	346,331
Tigner, J. A., Rome, Ga.	Combined Truss and Abdominal Support	346,244
Vaughan, Frank, Elizabeth City, N. C.	Life-preserving Float	346,332
Watkins, E. W., Falls Church, Va.	Steamer	346,334
Zimmer, Eugene, Mobile, Ala.	Plant-protector	346,253

PATENTS FOR INVENTIONS

(American and Foreign.) Trade Marks, etc., procured through the agency of

Arthur C. Fraser & Co.

TEMPLE COURT, NEW YORK CITY.

(Entrance 5-7 Beekman St.) Hand-book of information sent free to any address.

Important.

The improvements of the Grand Union Hotel are simply elegant, and the hotel is always kept in perfect order. It is so convenient to all the depots that guests arriving by the Grand Central Depot have their baggage transferred to and from the Grand Union Hotel in five minutes, free of charge. Guests arriving by steamer or railroad, South, North, East or West, are conveyed to the Grand Union Hotel by the elevated railroad for five to fifteen cents, thereby saving \$3 carriage hire. During the past year 110,000 people occupied the 613 rooms of the Grand Union Hotel at \$1 and upwards per day, including of course its elegant suites of rooms for families on the European plan. The dining-rooms, restaurant, cafe, lunch and wine-rooms were supplied with the best at moderate prices. Families lived better at the Grand Union Hotel, and for less money, than at any other first-class hotel in New York.

THE American House, Boston, has always been noted for the invariable excellence of its table, and never more than at present. Mr. Rice well knows that it is quality rather than quantity that pleases the experienced guest.

MANAGERS of mills, factories, furnaces, mines, etc., and parties starting manufacturing enterprises, and needing machinery or supplies of any kind, will find it profitable to consult the advertising columns of the MANUFACTURERS' RECORD. Its pages contain names of the best houses in the country among manufacturers of and dealers in machinery and mill supplies.

Carriage and Wagon Material.

AXLES.	
Half Patent, solid collar	dis 60
Common	rate 4
Concord	8 1/2
BODY LOOP ENDS.	
Plain, set	100
Bolts, Eagle	70
CLIPS.	
Superior Axle	dis 60
Norway	40
Saddle	doz set \$1 50
FINISHED CLIP KING BOLTS.	
Nos. 1 & 2	3
Flanged, per doz	\$3 00 3 50
DASHES.	
Leather	dis to \$
ENAMELED CLOTHS.	
Muslin, per yard, 5-4	18
Drill, " 50 in.	24
Duck, " 50 in.	29
Tan Back, " 5-4	32
FELLOW PLATES.	
Per D.	8
FIFTH WHEELS.	
Derby, 1/2, per doz	\$7 75
" 3/4, " " " "	8 75
Cincinnati, 1/2, per doz	6 00
" 3/4, " " " "	7 00
RUBBER DUCK AND DRILL—35% off list.	
SPRINGS.	
Seat, 1 1/2 x 26, per pair	90
Buggy, 1 1/2 in. and larger	8
1 1/2 to 1 3/4 in.	9
Oil-tempered springs ac. advance from above.	
MALLEABLE CASTINGS.	
Rate	11
Core	12
STEEL PADS.	
Per doz. pair	\$2 25 @ 7 50
Spokes, No. 1, 1 to 1 1/2	\$2 25 per set.
" " 1 to 1 1/2	2 50 "
" " 1 to 1 1/2	3 50 "
Wheels, Sarven Patent	\$6 50 to 14 00
SHAFT AND POLE COUPLINGS.	
	50%
H. B. LEATHER.	
No. 1 Top, per ft.	28
" " " "	23
" " " "	12
" " " "	10 @ 10 1/2
Fancy Morocco, per ft.	26
Bow, per ft.	20 @ 23
Collar, " "	24
Harness, per D.	40
HICKORY FELLOWS.	
X.....	1 1 1/2 1 3/4 1 5/8 1 3/4
XX.....	1 25 1 25 1 35 1 60 2 00 per set.
	3 00 3 25 3 50 3 75 4 25 "
HICKORY SPOKES.	
No. 1.....	1 1 1/2 1 3/4 1 5/8 1 3/4
	2 25 2 25 2 25 2 50 2 75 per set.
XX.....	3 50 3 50 3 50 3 50 3 75 "
HUBS.	
No. 1.....	5x7 6x8 7x9 8x10
	90 1 00 1 35 1 80 per set.
XX.....	5 in. and smaller 5 1/2
	2 25 2 50 per set

Splendid Tobacco Farm FOR SALE IN NORTH CAROLINA.

Sixty acres of fine tobacco land with splendid two story house and beautiful yard, fronting about 350 feet on the main street. In a town of 150 to 175 population, 15 miles from a city of 15,000 inhabitants and one of 5,000. The house is 300 yards from depot. There is a large stable, carriage house, corn crib and other out-houses, including 3 tobacco barns and 2 tenant houses. Good well of freestone water; 400 peach and apple trees, and 425 grape vines, all in full bearing. Splendid climate; healthy location. The buildings alone cost \$3,500. Will take \$2,500 cash. Special reasons for selling. Address J. P. R., care MANUFACTURERS' RECORD.

METAL-WORKING MACHINERY New and Second Hand, on Hand.

12 in. S. x 5 ft. Engine Lathes.
15 in. S. x 6 ft. Engine Lathes, Lathe & Morse.
16 in. S. x 6 ft. Engine Lathes, Harrington & Ames
17 in. S. x 7 ft. Engine Lathes, Hewes & Phillips
18 in. S. x 8 ft. Engine Lathes, New Haven.
20 in. S. x 8, 10 & 14 ft. Engine Lathes, Harris & Ames
24 in. S. x 14 & 20 ft. Engine Lathes, Ames.
25 in. S. 10 ft. Engine Lathes.
26 in. S. x 16 ft. Engine Lathes, Perkins.
41 in. S. x 18 ft. Engine Lathes, Putnam.
50 in. in Gap Extension Bed Engine Lathes, Box.
12 in. Stroke Shapers, New Haven & Eungat.
15 in. Stroke Shapers, Wolcott & Eberhardt.
20 in. Stroke Shapers, Eberhardt.
24 in. Stroke Shapers, Bridgeport.
20 in. x 20 in. x 4 ft. Planer, New Haven.
20 in. x 20 in. x 6 ft. Planer, Whitcomb.
20 in. x 20 in. x 6 ft. Planer, Pratt & Whitney.
22 in. x 22 in. x 4 ft. Planer, Powell.
22 in. x 22 in. x 5 ft. Planer, Ames.
24 in. x 24 in. x 4 ft. Planer, Ferris & Miles.
24 in. x 24 in. x 6 ft. Planer, Powell.
24 in. x 27 in. x 7 ft. Planer, Ames.
26 in. x 26 in. x 6 ft. Planer, Powell.
26 in. x 26 in. x 6 ft. Planer, Putnam.
30 in. x 30 in. x 10 ft. Planer, National.
20 in. Swing Drill, Prentice.
25 in. Swing Drill, Blaisdell.
28 in. Swing Drill, Blaisdell.
3 and 4 Spindle Drill, Garvin.
Brown & Sharpe Universal Miller.
Plain Miller, Lincoln Pattern.
No. 3 Miller, Garvin.
No. 5 Miller, Brainerd.
2 1/2 in. Cutting-off Machine, Pratt & Whitney.
No. 2—3 1/2—4 Stiles Punch Presses.
Also a line of New Tools all kinds. We are always glad to correspond, and if parties desiring to purchase will write, stating just what they want, we will be glad to name prices on either new or second hand.

E. P. BULLARD,

No. 14 Dey Street, New York.

Syracuse Twist Drill Co.

SYRACUSE, N. Y.

Cannon Chucking Reamers.



These Reamers will remove more stock than any other. They only require a hole large enough to carry away the chips, as they will cut to the center, and make a perfect hole.

They keep their size better than any other. As they cut only upon the end, there is no tendency to wear below size.

They will not turn aside for hard or soft spots, nor for holes.

Send for Prices and Catalogue.



Bates' Hand Elevators.
Patented April 18, 1871. Reissued July 25, 1874.
OVER 6,000 IN USE.

Adapted for Warehouses, Stores, Factories, Hotels, Public Institutions, and every place where merchandise, &c., is transferred from one story to another.

JAMES BATES, Patentee,

Nos. 1 3 & 5 President Street, BALTIMORE.

HARDWARE.

THE MANUFACTURERS' RECORD
IS THE FOREMOST EXPONENT OF THE INDUSTRIAL
INTERESTS OF THE SOUTH.

CINCINNATI, August 2, 1886.

	FOUNDRY.	Cash.
Hanging Rock Charcoal, No. 1.....	\$20 00@30 50	50
" " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " "	"
Southern Charcoal " " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " "	"
" " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " "	"
Strong Neutral Coke, " " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " "	"
" " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " "	"
American Scotch, " " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " "	"
" " " " " " " " " " " " " " " "	" " " " " " " " " " " " " " " "	"
GRAY FORGE.		
Neutral Coke.....	14 50@15 50	50
Cold Short.....	14 50@15 00	00

Specially reported by ROGERS, BROWN & CO. W.
W. BACKMAN, Resident Agent.

CHICAGO, August 2, 1886.

CHARCOAL FOUNDRY.		
Lake Superior	\$19	00@20 00
Southern.....	18	50@20 00
Hanging Rock.....	21	00@22 00
COKE AND STONE COAL FOUNDRY.		
Ohio (Hanging Rock) Softeners No. 1.....	18	50@19 50
" Blackband	19	50@19 20
" Jackson county	18	50@19 50
" Lake ore and cinder	19	50@19 50
Southern Coke, No. 2	16	00@17 50
" No. 2 1/2.....	16	00@17 00
CAR WHEEL AND MALLEABLE.		
Lake Superior.....	19	00@21 00
Standard Southern.....	21	00@23 00
Hanging Rock, cold blast.....	28	00@28 00
" warm blast.....	30	00@22 00
OLD MATERIALS.		
Old Rail, American.....	21	00@—
Old Wheels.....	16	00@—

Specially reported by GWO, H. HULL & Co., Commission Merchants for the sale of Hot and Cold Blast Pig Iron.

LOUISVILLE, KY., August 2, 1886.

PIG IRON.		
Southern Coke, No. 1 Foundry.....	\$16 00	@ \$17 00
" " " "	15 00	@ 16 00
" " " "	14 50	@ 15 15
Hanging Rock Coke, No. 1 Foundry....	16 00	@ 16 50
" " Charcl,	18 00	@ 19 00
Southern Charcoal, No. 1 Foundry....	17 00	@ 18 00
Silver Gray, different grades.....	14 00	@ 15 00
Southern Coke, No. 1 Mill, Neutral....	14 00	@ 15 00
" " " "	13 00	@ 14 00
" " " Cold Short.	13 50	@ 14 00
Southern Charcoal, No. 1 Mill.....	17 00	@ 17 50
White and Mottled, different grades....	19 00	@ 19 50
Southern Car Wheel " " brands.....	20 00	@ 21 50
" " other brands.....	21 00	@ 22 00
Hanging Rock Cold Blast.....	21 00	@ 22 50
" " Warm.....	20 00	@ 22 00

Specially reported by ROGERS, BROWN & Co., Gay Building, 204 N. 3rd street, St. Louis. W. H. SHIELDS, Manager.

ST. LOUIS, August 2, 1886.

Heavy car contracts continue to be placed in the West and Northwest. It is estimated that not less than 5,000 freight cars have been let in July. This stimulates demand for car wheel grades and common foundry irons.

The agricultural works are quite generally placing orders for their season's requirements. Stove men uniformly report a better trade, and call for more pig iron than last year.

Some large sales have been made at a small advance over last week's prices, but in general it may be said that figures, while very firm, are without any quotable change. We quote for cash on cars St. Louis:

HOT-BLAST CHARCOAL.		
Missouri.....	\$16 00@	\$17 00
Southern.....	17 00@	18 00
Ohio.....	— @ —	
COKE AND COAL.		
Missouri.....	— @ —	
Southern No. 1.....	16 50@	17 50
Southern No. 2.....	16 00@	16 50
Southern No. 2½.....	— @ —	
Ohio Softeners.....	17 00@	20 00
MILL IRONS.		
Missouri.....	16 60@	16 50
Southern.....	14 25@	15 75
CAR-WHEEL AND MALLEABLE IRON.		
Southern.....	20 00@	25 00
Lake Superior.....	21 00@	23 00
MISCELLANEOUS.		
Old Wheels.....	16 00@	16 50
Old Rails.....	— @ —	
Connellsville Coke, East St. Louis.....	— @ 5	

Specially reported by LOWE & TUCKER, Brokers and Commission.

CHATTANOOGA, TENN., August 2, 1886.

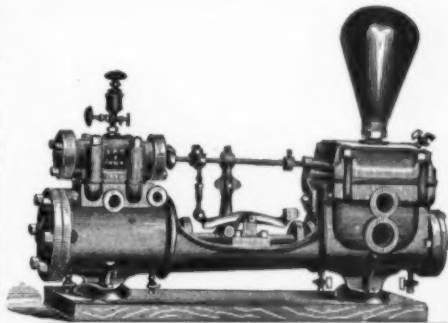
Business continues to improve all along the line. The continued favorable weather with occasional showers has brought the crops forward to a remarkable degree, and in many places but little shortage will be reported. In some localities money is reported scarce, but as a general thing discounts on legitimate business paper can be obtained at 8 to 10 per cent. per annum. A marked improvement may be reported in pig iron, both in price and demand; all the furnaces are well sold up, and some offers at current rates for future delivery have been declined. Manufacturing interests are being developed rapidly in nearly every section of the South, and now cover a wide range of different articles. We quote:

No. 1 Foundry.....	\$14 50	@15 50
No. 2 Foundry.....	13 50	@14 00
American Scotch.....	13 50	@14 00
Gray Forge.....	12 00	@13 00
Car-Wheel Iron.....	23 00	@25 00
Ores, Red and Brown.....	1 50	@ 25
Furnace Coke.....	8 00	@ 30
Nails, car-load lots, 30 days.....	—	@ —
Bar Iron, per 100 lb. 30 days.....	—	@ 75
Old Rails.....	18 00	@19 00
Old Wheels.....	13 00	@ —
Wrought Scrap, No. 1.....	—	@ 70
No. 2.....	—	@ 50
Cotton Tie Clippings.....	—	@ —
Cash Scrap.....	—	@ —
Railroad Spikes.....	—	@ 1 85
Railroad spikes.....	—	@ 25
Light Steel Rails, long ton.....	—	@ —
Barb wire—Cambridge link.....	—	@ —
Barbed wire—four point galvanized.....	—	@ —
Barb ware.....	—	@ —

CORRESPONDENCE relating to the manufacturing, mining, lumbering and all other material interests of the Southern States is solicited. Reaching so many capitalists in all parts of the United States seeking profitable investment in the South, the MANUFACTURERS' RECORD offers an excellent chance for the people in that section to place the advantages of each locality before those likely to be interested. We will take great pleasure at all times in telling what has already been accomplished in the South, and showing up the opportunities of doing still more.

THE engine-lathe, drill-press, Buffalo forge-blower, &c., recently placed in the Birmingham Agricultural Works, Birmingham, Ala., were furnished by Messrs. Shaw & Davin, of that progressive city. The same firm have also sold an engine and boiler to W. R. Hill & Co. of that city, for their new planing mill.

THE *Hattie House*, Knoxville, Tenn., a most admirable hostelry, situated on Gay street, the principal street of the city, Mr. I. C. Flanches, proprietor, is par excellence the hotel of Knoxville. It is justly entitled to the large patronage it receives by reason of the untiring and generous efforts which



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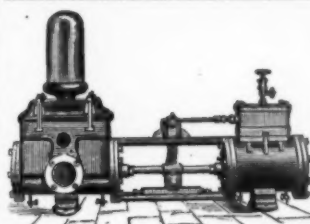
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 Blair Manufacturing Co.—Easy Lawn Mowers.
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 Buffalo Hammer Co.—Cast Steel Hammers.
 C. S. Bell & Co.—Farm Bells.
 Carr & Crawley.—Shelf and Saddlery Hardware.
 Clark Bros. & Co.—Bolts.
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 John Chatillon & Son.—Spring Balances.
 R. S. Clark & Co.—Hand and Sleigh Bells.

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 Gooch Freezer Co.—Peerless Freezers.
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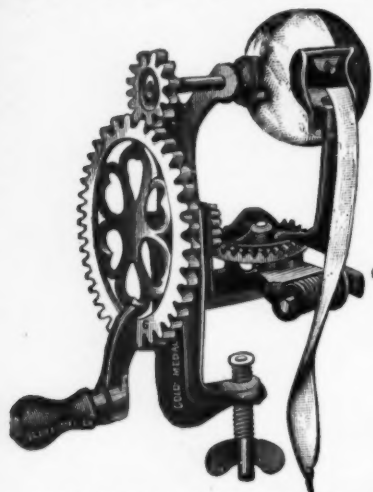
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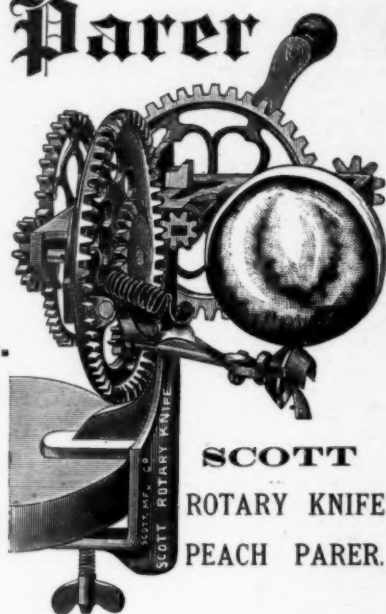
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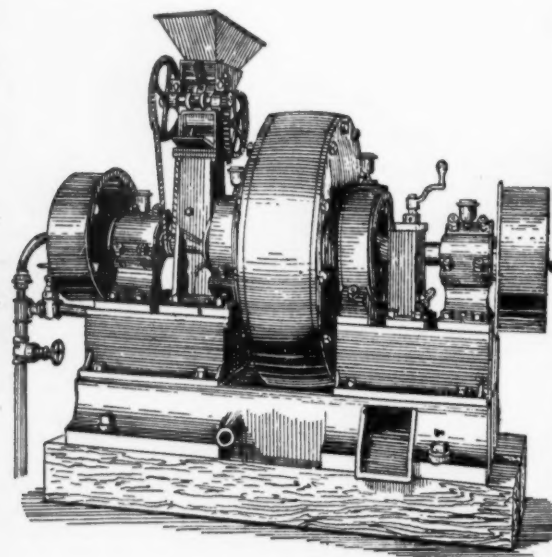
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Ives.....	
Cook's Douglass Mfg. Co.....	dis 60¢ 10
Griswold.....	dis 50¢ 10
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Russell Jennings' Auger, Dowell, Machine.....	
Dowel and Hand Rail Bits.....	dis 10¢ 10 10
Ives' " Jennings' Bits.....	dis 40¢ 10 10
Expansive Bits, Clark's small, 1 1/8; large, 2 1/8.....	dis 25
Expansive Bits, Ives.....	dis 30¢ 10, dis 33 1/2
Expansive Bits, Blake's.....	dis 40
Hollow Augers, Ives.....	dis 25
Hollow Augers, Douglass.....	dis 25¢ 10
Hol. Aug., Bonney's Adjust., 1/2 doz 1/8, dis 25¢ 10	
Hol. Aug., Stearns' Adjust., 1/2 doz 1/8, dis 20¢ 10	
Hol. Aug., Ives' Expansive, each 1/4, 50, dis 30¢ 10	
Hol. Aug., Universal Expansive, each 1/4, 50, dis 30%	
Wood's.....	dis 25
Gimlet Bits.....	\$7.50 gross, dis 50
Gimlet Bits, Diamond.....	1/2 doz 1/8, dis 40
Double Cut Gimlet Bits, Shephardson's.....	dis 40
Double Cut Gimlet Bits, Douglass.....	dis 40
Double Cut Gimlet Bits, Ives.....	dis 50
Morse's Bit Stock Drill.....	dis 40¢ 10
L'Hommedieu's Ship Augers.....	dis 15
AWL HAFES.	
Sewing Brass Ferrule.....	\$3.50 gross—dis 40¢ 10
Patent Sewing, Short.....	\$1 gross—dis 40¢ 10
Patent Sewing, Long.....	\$1.20 gross—dis 40¢ 10
Patent Peg, Plain Top.....	\$10 gross—dis 40¢ 10
Patent Peg, Leather Top.....	\$12 gross—dis 40¢ 10
AWLS, BRAD SETS, &c.	
Awls, Sewing, Common.....	75c. to \$1
Awls, Shouldered Peg.....	75c. to \$1
Awls, Patent Peg.....	90c. to \$1.50
Awls, Shouldered Brad, gross 1/2 doz.....	dis 25¢ 10
Awls, Handled Brad.....	\$7 gross—dis 25¢ 10
Brad Sets, Aiken's.....	1/2 doz. \$12—dis 45¢ 10
Brad Sets, No. 42, 1/2 doz.....	\$12.50—dis 70
Brad Sets, Stanley's Exc., No. 1, 1/2 doz.....	\$1.50, dis 30¢ 10
Brad Sets, Stanley's Exc., No. 2, 1/2 doz.....	\$1.50, dis 30¢ 10
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AXES.	
Collins & Co.....	\$7.25; beveled—\$7.75
Cohoes Mfg. Co.....	\$7.25; beveled—\$7.75
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Single Bit, 1/4 to 3/4 and under.....	1/2 doz. \$6.50 net
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Single Bit, beveled.....	30c. doz. advance
Double Bit, 1/4 to 3/4 and under.....	1/2 doz. \$12.00 net
Double Bit, 3/4 to 6 and over.....	1/2 doz. \$13.00 net
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Second quality Axes.....	50 cts. less than above
AXLES.	
Sheldon & Co., iron.....	55% off
AXLE GRASS—FRASER'S.....	55% off
AXLE GRASS—FRASER'S.....	1 lb. 6c.
BALANCES.	
Spring Balances.....	dis 50%
BELLS.	
Hand, Light Brass.....	dis 75¢ 10
Hand, White Metal.....	dis 60
Hand, Silver Chime.....	dis 20¢ 10
Hand, Globe (Cone's Patent).....	dis 25¢ 10
Gong, Abbe's.....	dis 20¢ 10
Gong, Yankee.....	dis 20¢ 10
Gong, Barton's.....	dis 20¢ 10
Leon Reading.....	dis 15¢ 10
Pull, Brook's.....	dis 50¢ 10
Crank, Taylor's.....	dis 25¢ 10
Lever, Sargent's.....	dis 55¢ 10
Bloomfield.....	dis 20
Lever, R. & E. M. Co's.....	dis 45¢ 10 8
Call.....	dis 25
Cow, Common Wrought.....	dis 55¢ 10
Cow, Western, Sargent's List.....	dis 55¢ 10
Cow, Kentucky, Sargent's List.....	dis 55¢ 10
Cow, Moore's or Dodge's, Genuine Ky., new list:	
Nos. 0 1 1 1/2 2 3 5 5 6 Hog (dis. 70	
\$12 \$10 \$8 \$7 \$6 \$5 \$4 \$3.50 \$3.50 \$3.50	
Cow, Texas Star.....	dis 40%
BELLGOWS.	
Blacksmith's Common.....	dis 50¢ 10
Molder's.....	dis 25
Hand Bellows.....	dis 25
BLIND FASTENERS.	
Francis.....	dis 20
Mackrell's.....	1/2 doz pairs \$1.00, dis 70
Van Sand's Screw Pattern.....	1/2 doz gross, net
Van Sand's Old Pattern, 1 1/4, 1 1/2, 1 3/4, 2, 2 1/2, 3, 3 1/2, 4, 4 1/2, 5, 5 1/2, 6, 6 1/2, 7, 7 1/2, 8, 8 1/2, 9, 9 1/2, 10, 10 1/2, 11, 11 1/2, 12, 12 1/2, 13, 13 1/2, 14, 14 1/2, 15, 15 1/2, 16, 16 1/2, 17, 17 1/2, 18, 18 1/2, 19, 19 1/2, 20, 20 1/2, 21, 21 1/2, 22, 22 1/2, 23, 23 1/2, 24, 24 1/2, 25, 25 1/2, 26, 26 1/2, 27, 27 1/2, 28, 28 1/2, 29, 29 1/2, 30, 30 1/2, 31, 31 1/2, 32, 32 1/2, 33, 33 1/2, 34, 34 1/2, 35, 35 1/2, 36, 36 1/2, 37, 37 1/2, 38, 38 1/2, 39, 39 1/2, 40, 40 1/2, 41, 41 1/2, 42, 42 1/2, 43, 43 1/2, 44, 44 1/2, 45, 45 1/2, 46, 46 1/2, 47, 47 1/2, 48, 48 1/2, 49, 49 1/2, 50, 50 1/2, 51, 51 1/2, 52, 52 1/2, 53, 53 1/2, 54, 54 1/2, 55, 55 1/2, 56, 56 1/2, 57, 57 1/2, 58, 58 1/2, 59, 59 1/2, 60, 60 1/2, 61, 61 1/2, 62, 62 1/2, 63, 63 1/2, 64, 64 1/2, 65, 65 1/2, 66, 66 1/2, 67, 67 1/2, 68, 68 1/2, 69, 69 1/2, 70, 70 1/2, 71, 71 1/2, 72, 72 1/2, 73, 73 1/2, 74, 74 1/2, 75, 75 1/2, 76, 76 1/2, 77, 77 1/2, 78, 78 1/2, 79, 79 1/2, 80, 80 1/2, 81, 81 1/2, 82, 82 1/2, 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SHEAVES.
Sliding Door, M. W. & Co., List.....dis 45¢
Sliding Door, R. & E. list.....dis 60¢
Sliding Door, Patent Roller.....dis 60¢
Sliding Door, Pt. Roller, Hatfield's.....dis 60¢
Sliding Door, Russell's Anti-Friction.....dis 60¢
Also see Hangers.

SHOVELS AND SPADES.
Ames, New List, July 1, 1888.....dis 15¢
Griffiths.....dis 15¢
Remington's (Lowman's Patent).....dis 30¢
Rowland's.....dis 60¢
Kimball's.....dis 35¢
Lippincott, new list.....dis 20¢
Hussey, Bliss & Co.....dis 15¢

SPOKE TRIMMERS.
Bonney's.....doz \$10, dis 40¢
Stearns.....doz \$9, dis 20¢
Ives'.....No. 1, \$15; No. 2, \$12 doz, dis 55¢
Douglass'.....doz \$9, dis 15¢

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Wm. Rogers Manf. Co.....dis 50¢
Holmes, Booth & Hayden.....dis 40¢
Brown Bros.....dis 40¢
Wallace's Steel Silver Plated.....dis 33¢
Rogers Bros 1847.....dis 50¢
C. Rogers & Bro.....dis 40¢

SILVER PLATED HOLLOW WARE.
Wm. Rogers Manf. Co.....dis 40¢
Meriden Britannia Co.....dis 33¢

SOLDERING IRONS AND COPPERS.
Cover's Soldering Iron.....dis 35¢
Cover's Adjustable Coppers.....dis 35¢

SPOONS.
Britannia.....dis 60¢
Tinned, Iron, Table and Tea.....dis 65¢
Tinned Iron Basting.....dis 65¢
German Silver.....dis 40¢

STONES.
Hindostan No. 1, 5c; No. 2, 8c.....net
Sand Stone.....No. 1, 6c; No. 2, 33¢
Washita Stone.....No. 1, 10c; No. 2, 16c
Washita Stone, Slips.....No. 1, 45c; No. 2, 50c
Arkansas.....\$1.50 per lb., net

SQUARES.
Steel.....dis 60¢
Iron.....dis 60¢
Nickel Plated.....add \$2.50 per doz net
Try Square and T Bevels.....dis 50¢
Diston's Try Square and T Bevels.....dis 40¢

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[Less 10¢ per doz for cash if paid by 6th of month following sale.]

American Iron Carpet Tacks, all kinds.....65¢
Steel Carpet Tacks, all kinds.....60¢
Swedes Iron Carpet Tacks, all kinds.....60¢
Swedes Iron Upholsterers' Tacks.....60¢
Tinned Swedes Iron Tacks.....60¢
Tinned Swedes Iron Upholsterers' Tacks.....60¢
American Iron Cut Tacks.....55¢
Gimp and Lace Tacks.....50¢
Tinned Gimp and Lace Tacks.....50¢
Copper Tacks.....50¢
Copper Finishing and Trunk Nails.....50¢
Cigar Box Nails.....50¢
Finishing Nails.....50¢
Trunk and Clout Nails.....50¢
Tinned Trunk and Clout Nails.....50¢
Basket Nails.....50¢
Chair Nails.....50¢
Zinc Glaciers' Points.....45¢
Common and Patent Brads.....45¢
Hungarian Nails and Miners' Tacks.....45¢
Tinned Capped Trunk Nails.....30¢
Looking Glass Tacks.....25¢
Picture Frame Points.....25¢
Leathered Carpet Tacks.....25¢
Brush Tacks.....25¢

TAP BORERS.
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Ives' Tap Borers.....dis 15¢
Enterprise Mfg. Co.....dis 25¢

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Enterprise Mfg. Co (Champion).....dis 25¢
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All Iron.....doz \$9.50, dis 40¢
Wilson's.....dis 15¢

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Tin Case.....dis 75¢
Storm Glasses.....\$3.25 doz

TOE CALKS.
Winsted.....dis 10¢

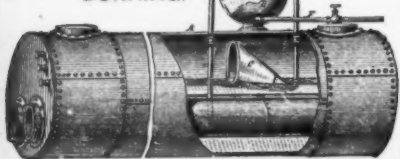
TRAPS.
Game, Newhouse.....dis 35¢
Game, Oneida Pattern.....dis 60¢
Game, Blake's Patent.....dis 40¢
Mouse, Wood, Choker.....doz holes, 16c
Mouse, Round Wire.....doz \$1.50, dis 10¢
Mouse Cage, Wire.....doz \$2.50, dis 10¢
Mouse, Catch-em-alive.....doz \$2.50, dis 10¢
Cyclon Mouse.....doz 75 cts.
Ideal Mouse.....doz \$1.00
Boss.....doz \$2.50
Rat, "Decoy".....doz \$10.00, dis 10¢
Delusion Mouse, per doz.....\$1.50

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Lothrop's Brick and Plastering.....dis 25¢
Reed's Brick and Plastering.....dis 15¢
Diston's Brick and Plastering.....dis 20¢
Clement & Maynard's.....dis 20¢
Worrall's Brick.....dis 20¢
Brades & Walby's.....dis 20¢
Garden.....dis 55¢

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Handy Truck.....\$2.50 net
Penfield Block Co's list, 1888.....dis 35¢
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Peerless, with Cogs, No. 4.....\$6.00
Eureka, No. 2.....doz 43 cts

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Trenton.....dis 45¢
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Brass and Copper, list of Jan. 17, 1884.....dis 30¢
Bright and Annealed.....Nos. 6@18, dis 50¢
Bright and Annealed.....Nos. 19@26, dis 60¢
Bright and Annealed.....Nos. 27@35, dis 70¢
Coppered.....Nos. 6@18, dis 30¢
Galvanized.....Market list dis 40¢
Tinned, Nos. 6 to 18.....dis 60¢
Tinned Broom Wire, Nos. 18 to 23.....dis 60¢
Annealed Fence, Nos. 889.....dis 55¢
Annealed Grape, Nos. 10 to 14.....dis 50¢
Fence Staples, Galvanized.....dis 50¢
Japanned Barb Fence.....dis 40¢
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Buck Thorn Galvanized.....dis 55¢
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Clothes Line Wire, Galvanized.....dis 75¢
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Baxter's Diagonal.....dis 20¢
Coe's "Genuine".....dis 60¢
Coe's "Mechanics".....dis 75¢
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Coe's Pattern, Wrought.....dis 60¢
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The Holyoke Machine Company, of Worcester, Massachusetts, advertise in this issue their well-known **Hercules Water Wheel**. This wheel has many points of merit that strongly commend it to the attention of those who use water power. The most thorough tests have demonstrated its many good qualities. In Holyoke it is the standard water wheel, the aggregate horse power of the Hercules wheels in operation there being greater than that of all other wheels combined. These wheels are very popular in the South as well as in the North, having been in use for many years in a large number of Southern mills. There are four of the Hercules wheels now in operation in the big cotton mills of the Eagle & Phenix Manufacturing Co., Columbus, Ga., and Mr. John Hill of that company, in writing, Feb. 25, 1885, to the Holyoke Machine Co., said: "Within the past four years I have ordered four Hercules wheels, all of which have given the purchasers entire satisfaction. Three of the wheels are on regular duty in the Eagle & Phenix Mills. The first wheel ordered did so well that a 'Hercules' wheel has been added each time a new wheel was wanted. In the Eagle & Phenix Mills I supervise twenty water wheels of six different styles. The 'Hercules' is by far the most durable and best made wheel in use here, and, in fact, I know of no wheel its equal mechanically. It is all that can be desired in economy of water. In fact, it is a strictly first-class wheel in every way, and the wheel to buy, use and depend upon."
That is a pretty strong letter, but it is only a sample of letters received by the manufacturers of this wheel. Among the recent shipment of wheels have been two—one a 34-inch and one of 60-inch—to a Georgia cotton mill. Two Hercules wheels are being put in at Natick Cotton Mill, and one at the Arctic Mill of B. B. & R. Knight near Providence. This will make eleven wheels furnished to this well-known firm, one of the most prominent in the manufacturing line in New England. Hercules wheels are sold in England, Ireland and Scotland, and on the Continent, a cable order having been received only a few days ago for one to go to France. The manufacturers say: "The Hercules gives the most power for its size and the highest average percentage from full to one-half gate of any wheel ever made." Their advice to all users of water wheels is to "get the best at first." If you are interested in water wheels, if you want a new wheel or a larger wheel, or a better wheel than you are using, write to the Holyoke Machine Co., Worcester, Mass., for catalogue No. 3.

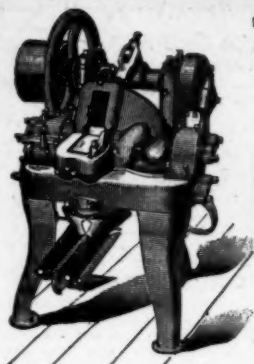
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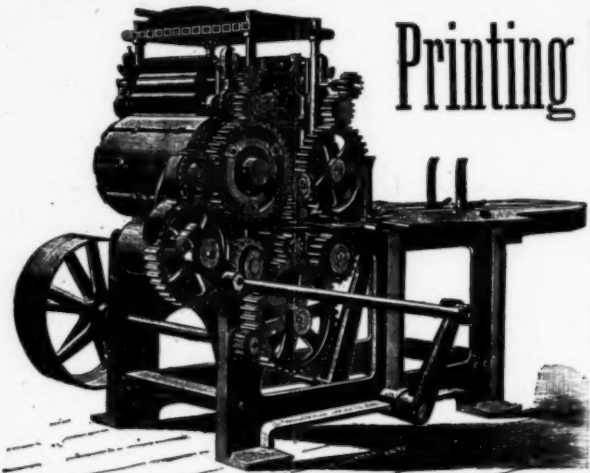
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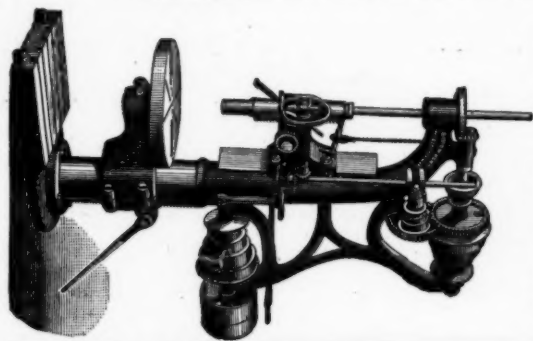
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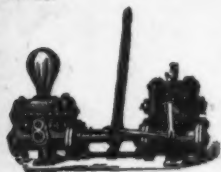
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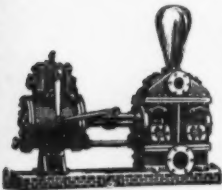
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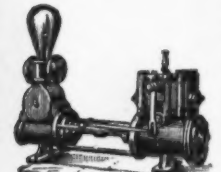
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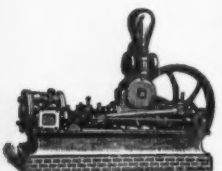
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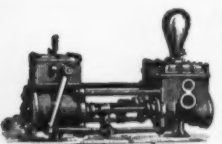
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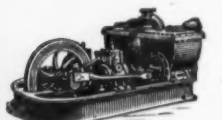
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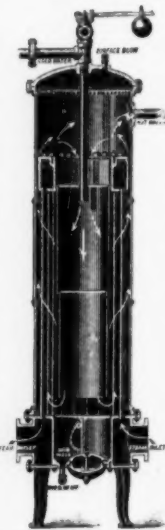
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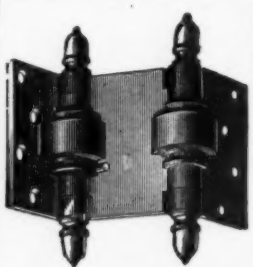
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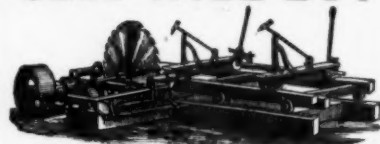
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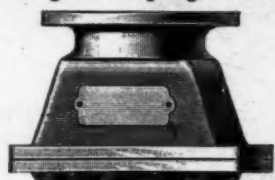
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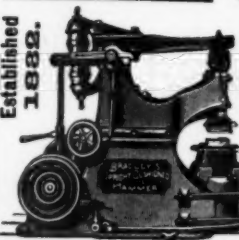
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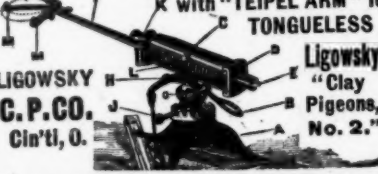
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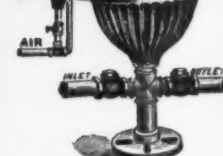
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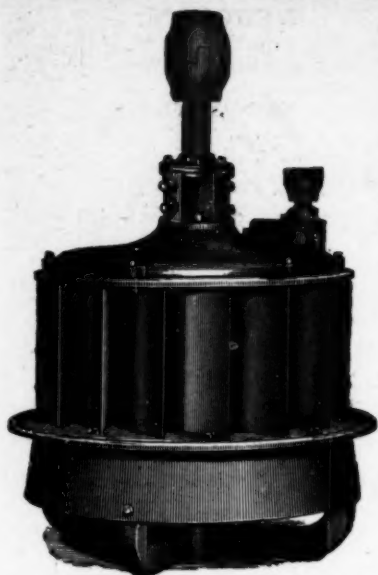
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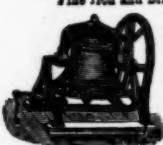
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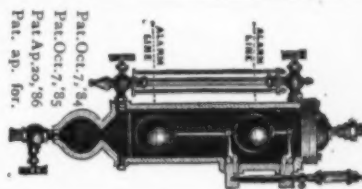
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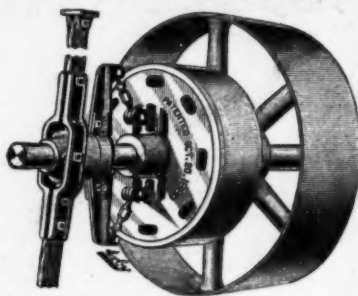
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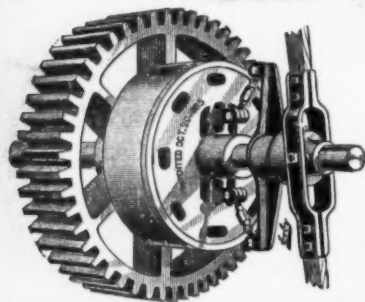
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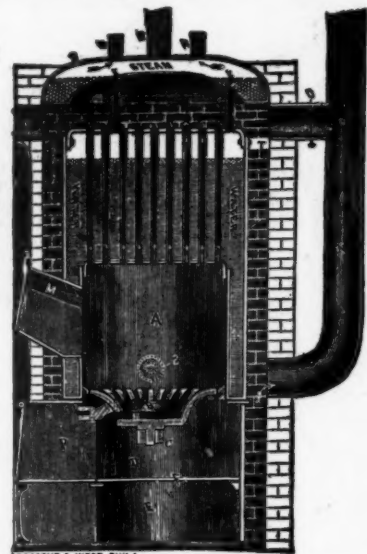
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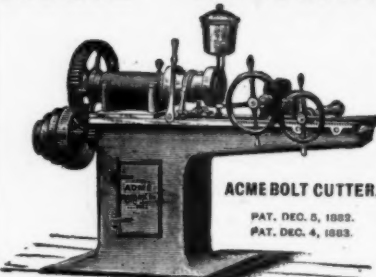
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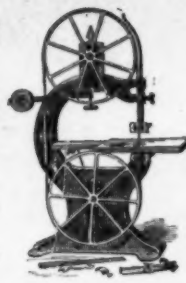
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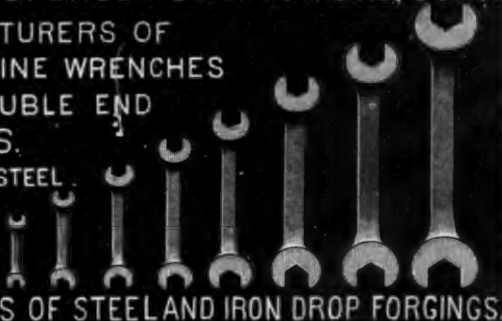
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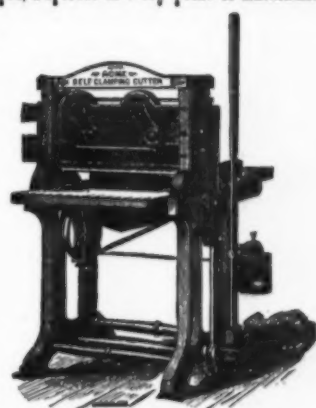
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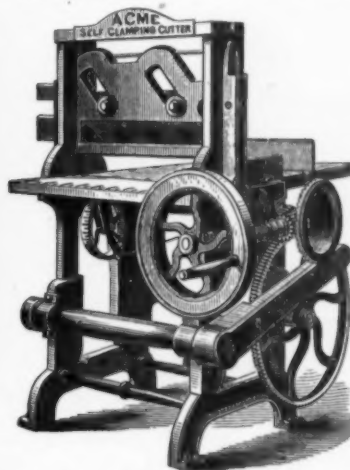
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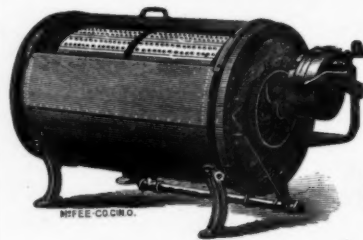
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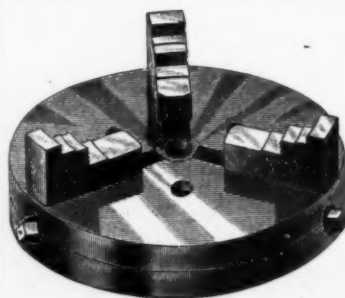
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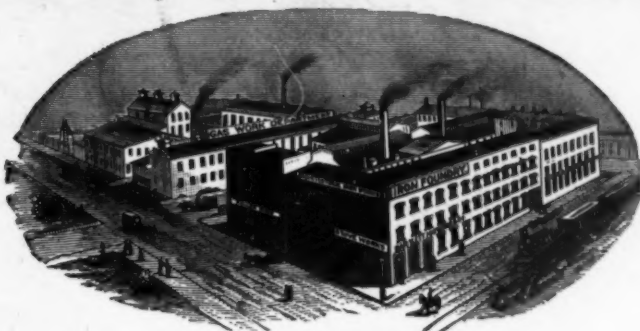
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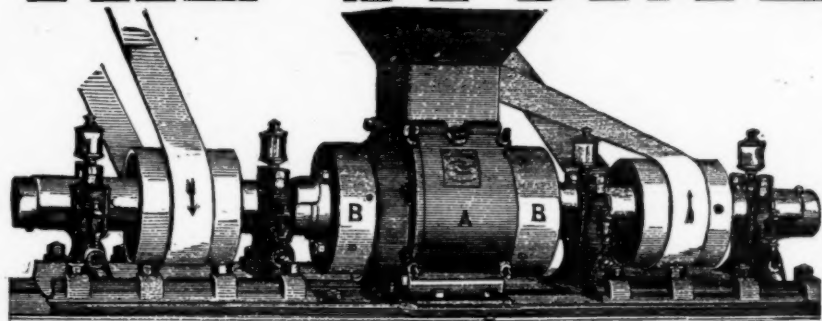
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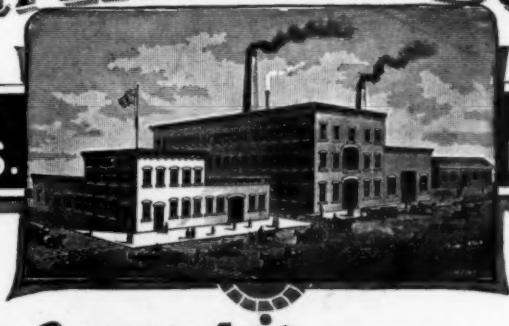
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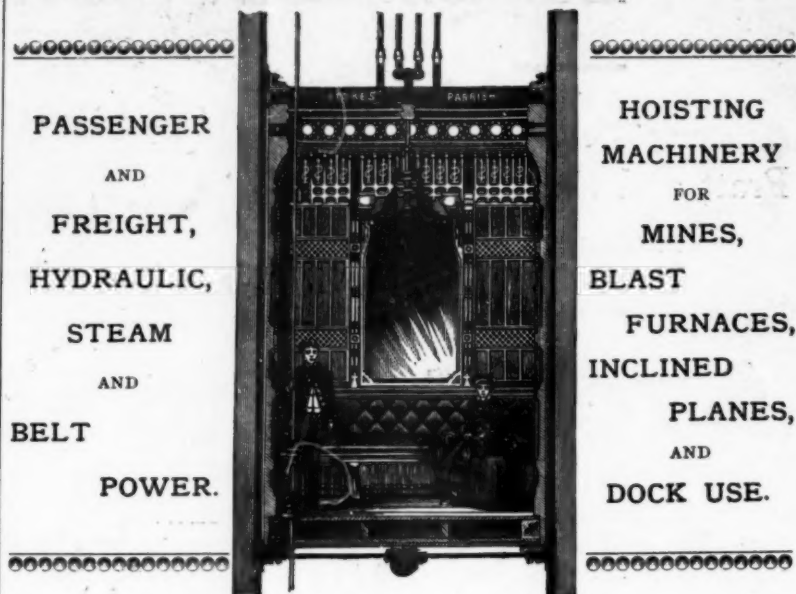
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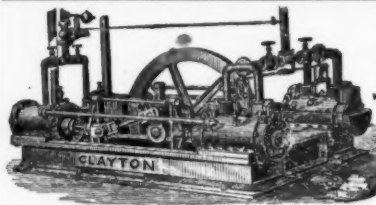
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